ADULT COURT PSYCHIATRIC CLINICS[1]

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In 1909 when William Healy began his work in the Cook County Juvenile Court he was not only inaugurating a new and vitally important approach to the study of delinquency and crime, but he was also introducing an entirely new element into the constitution of our courts—the court psychiatric clinic. It is not my purpose in this presentation to trace the development of the juvenile court clinics but to confine myself to an analysis of the development and functioning of the adult court psychiatric clinics.

Despite the rapidly increasing acceptance of psychiatry by most disciplines—education, religion, the army, and even the law—the establishment of court psychiatric clinics has been amazingly and disappointingly slow. We must either conclude that these clinics, during the past quarter century, have proved ineffectual in improving the quality of the work of the criminal courts to which they are attached, or that their accomplishments have not been sufficiently publicized. I hold strongly to the latter view. Indeed, I believe that these court clinics are among the most important psychiatric agencies in our American society.

In all there are 7 such clinics, Chicago having 2. The first adult psychiatric clinic was established in Chicago. Dr. Healy's pioneer clinic in the Chicago Juvenile Court apparently so greatly impressed Chief Justice Olsen of the Municipal Court that a psychopathic laboratory was established in conjunction with that court in 1914, under the direction of Dr. William J. Hickson. Detroit and Baltimore both established adult psychiatric court clinics in 1921. Dr. John Rathbone Oliver was the first director of the Baltimore clinic. Dr. Oliver, long an active member of The American Psychiatric Association, was a colorful and unique figure. He was a psychiatrist, an ordained priest of the Anglican Church, an authority on early Greek medicine, and a man with the courage of a pioneer. On the recommendation of the psychiatric department of the University of Michigan, Dr. Arnold L. Jacoby was selected to direct the Clinic of the Recorders Court in Detroit. He began his work in February, 1921 and continued until his sudden death April 30, 1927. Then there were established the Cleveland Clinic in 1925, the Behavior Clinic of the Criminal Court of Cook County, Chicago, in 1931, the Clinic of the Court of General Sessions in New York in 1933, and the Clinic of the Court of Quarter Sessions in Pittsburgh in 1937. I am happy to report that an eighth psychiatric court clinic was opened on the second of this month. It will serve the magistrates courts of New York City under the direction of Dr. Pierre Rube. Seattle had such a clinic established in 1938. It functioned until 1942; unfortunately it was a war casualty and has not been resuscitated.

I succeeded Dr. Oliver in Baltimore in 1930. And now, after more than 15 years' experience as the psychiatrist of that court clinic, I feel that I have the right to present before this Association an evaluation of the work of such clinics, discussing their weaknesses as well as their great strengths. I might even say that I feel that I have the duty to make such a presentation. For I believe that if I can succeed in accurately presenting to you the active functioning of this type of community psychiatric service you will yourselves become its proponents and will stimulate your communities to establish such psychiatric services.

In Fig. 1 you will see an analysis of the work of the 7 adult psychiatric clinics now in existence. On examining these data, it becomes immediately apparent that there is, to borrow the army terminology, no S.O.P. —no standard operating procedure for such clinics. All the clinics primarily serve criminal courts, except one in Chicago that serves the municipal or magistrate courts. Professor Sheldon Glueck of the Harvard Law School has advanced the view that psychiatry

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Name, Population, Date Estab.	Location	Author. Act	Profess. Pers. Salaries	Nonprofess. Pers. Salaries	Annual Case Load, Types Service	Annual Budget	Time of Exam.	Psychiat. Referral Sources
Chicago, 1914 3,396,808 Psychiatric Institute of Municipal Court	Court House House of Correct. (Research Unit)	No statutory basis	Psychiatrists: Director (full time), $7,500 4 psychiat. (part time), $3,000–$5,000 1 psychol. (part time), $1,800 2 psychiat. social workers, $4,000 2 soc. workers, $2,600–$3,000	2 secty.-clinic managers, $3,000 2 stenog., $2,600–$2,800 Clerk I. B. M., $2,700 1 switchboard oper., $2,200 1 woman bailiff, $2,500 2 police, $3,100	Psychiat. opin., 4,000 Fitness to drive, ±50 Some treatment cases No juveniles Total, 4,100	$77,910	Pretrial, 15% Posttrial, 85%	95% Judge Munic. Co ±5% fro 101 commun agencies
Baltimore 1921 859,100 Medical Office of Supreme Bench	Court House and Jail Offices	Chap. 120, Acts A1920 Maryland	1 psychiat. (part time), $5,000 1 psychol. (full time), $3,600 1 hematologist (part time), $700 Soc. workers, none	1 stenog.-secretary, $2,500	Psychiat. opin., 180 Physic. ability to work, 15 Blood grouping Bastardy, 95 Fitness to drive, 8 Credibility as witness, 5 Juveniles, rare Total, 300	$12,000	Pretrial, 50% Posttrial, 50%	Judge, 57% Jail, 15% Defense coun 15% States atty., Prob. dept., Others, 2%
Detroit 1921 1,623,452 Psychopathic Clinic of Recorders Court	Municipal Court Building	Act 369 Pub. Act 1919, Sect. 16520 (Mich.)	Exec. direc. psychol. $10,416 (full time) 1 chief psychiatrist, $7,615–$8,396 (full time) 1 assist. psychiatrist, $6,753–$7,581 (full time) 1 head psychologist, $4,977–$5,598 (full time) 4 senior psychol. $4,370–$4,847 (full time) 3 jun. psychol., $3,894–$4,212 (full time) 1 physician (part time), $2,395	2 sect. med. stenog., $3,670–$4,417 4 sen. med. stenog., $3,007–$3,352 3 jun. med. stenog., $2,743–$2,875	Psychiat. opin., 2,250 Fitness to drive, 425 Miscellaneous, 30 Juveniles, rare Total, 2,700	$104,635	Pretrial, 8% Posttrial, 92%	Crim. court judges, 95 Prob., 2.5% Jail, 2.5% Traffic div. judges, 70 License bur state poli et al., 30%
Cleveland 1925 878,336 Psychiatric Clinic of Municipal and Criminal Courts	Criminal Court Building	General Code of Ohio 1541	Director-psychiat. (part time), $7,200 1 psychiat. (part time), $5,000 2 psychol. (full time), $3,600–$4,300 2 psychiat. soc. workers, $3,750–$4,400	2 secretaries, $2,500–$3,000	Psychiat. opin., 650 Physic. ability to work, 5 Fitness to drive, 20 No juvenile cases Total, 675	$33,500	Pretrial, 10% Posttrial, 90%	Judges, 97 Probat., 3%
Chicago 1931 3,396,803 Clinic of Criminal Court of Cook County	Criminal Court Building	Ill. Statute Estab. Bureau Public Welfare in Counties Over 500,000 With Medical Service	Director-psychiat., 15 hours, $7,500 1 assoc. psychiat., 15 hours, $3,900 1 psychol., 15 hours, $1,716 1 soc. worker (full time), $3,000	1 clinic. secty., $2,820 1 med. stenog., $2,400 1 clerk typist, $2,100	Psychiat. opin., re.: (A) Able to go to trial, (B) Mental disease present, 450 Med. emergencies in courthouse No juvenile cases Total, 500	$23,000	Pretrial, 95% Posttrial, 5%	Judges, 98 Jail, 2%
New York 1932 Manhattan County 1,889,424 Psychiat. Clinic Court Genl. Sessions	Criminal Court Building	Section 939 Code of Crim. Proceed. N. Y. State	4 Psychiat. (full time), $3,200–$6,450 2 psychol. (full time), $3,000–$3,500 Soc. workers, none	2 clinic clerks, $2,000–$3,100 2 stenogs., $2,000–$3,100	Psychiat. opin., 2,537 Therapy, few No juvenile cases Total, 1,575	$36,000	Pretrial, 15% Posttrial, 85% All cases found guilty	Judges, 98 Prob. case other ci 2%
Pittsburgh 1937 671,659 Behavior Clinic, Court Quarter Sessions Allegheny County	City-County Building and Jail Offices	No Statute, Estab. by City Commissioners as Part of Probation Dept.	Director-psychiat. (half time), $4,800 1 psychiat. (full time), $7,200 1 asst. psychiat. (part time), $4,200 1 psychol., $5,000 (full time) 2 psychiat. soc. workers, $2,800	1 sect. statist., $5,000 2 stenogs., $2,500–$3,000	Psychiat. opin., 575 No juvenile cases Total, 575	$36,700	Pretrial chiefly	Judges al entirely Dist. atty refer th judges

FIG. 1.—Analysis of Work of Seven Court Psychiatric Clinics.

Time of Exam.	Psychiat. Referral Sources	Personal Testimony	Admissibility of Report	Types Psych. Report	Observ. Facility	Clinical Tests Employed	Psychological Tests	Teaching, Research, Etc.
Pretrial, 15% Posttrial, 85%	95% Judges Munic. Court ±5% from 101 community agencies	400 cases	Nearly always admitted	Brief report with recommend. in nearly all Full psychiat. report to treatment agencies	No hospital facility	Blood tests-syph., all female sex cases—some males Spinal fluid, ±12 per ann. E. E. G., ±100 per ann.	Wechsler, T. A. T., Rorschach several a day Also aptitude, achievement, reading tests, visual memory drawings	Teaching in univ. and psychoanal. institute, Psychol. internships, grad. students soc. work, med. clerkships All psychologists are doing research
Pretrial, 50% Posttrial, 50%	Judge, 57% Jail, 15% Defense counsel, 15% States atty., 6% Prob. dept., 3% Others, 2%	15 cases	Nearly always admitted	Full, 87% Brief, 13% Specific recommend. re dispos., 95%	Jail hospital not adequate	Blood tests-syph., all cases under age 50 Spinal fluid, 6 X-ray skull, 4 E. E. G., 5	Psychometric test (Otis, Wechsler, Binet), 100% Rorschach, 90% Free hand drawing, 90% One or more other tests (T. A. T.; four picture test; Bender; M. M. P. I.; word assoc. test), 50%	Psychiat. gives 15 clinics, V. A. hosp., 4 lect. med. school, 2 in univ. occas. in law school Psychol. carrying out research on new test
Pretrial, 8% Posttrial, 92%	Crim. court div. judges, 95% Prob., 2.5% Jail, 2.5% Traffic div. judges, 70% License bureau, state police, et al., 30%	225 sanity commission cases	Only when sanity commiss. appointed	Restrict. to sanity-insan. issue, 8% Full psych. study with specific recommend., 92%	Psychopathic ward receiving hospital	Blood tests-syph., all cases Spinal fluid, 250 E. E. G., 50	Otis, 100% Wechsler or Terman if Otis I. Q. less than 70 Rorschach, 100 Bender, 50	2 psychol. teach psychol. sociol. and criminol. in university 1 psychol. in police dept. school No student or interne train.
Pretrial, 10% Posttrial, 90%	Judges, 97% Probat., 3%	40	Posttrial cases	Full psychiat. study, 98% Brief psych. study, 2% Genl. recom. re dispos., 75% Specif. recom. re dispos., 20%	Jail hospital	Blood tests-syph., 100 Spinal fluid, 3 E. E. G., 7	Wechsler, 600 Binet, 25 Rorschach, 10 T. A. T., 40 Szondi, 10	Casual lectures 4 or 5 per ann. One interne in psychology
Pretrial, 95% Posttrial, 5%	Judges, 98% Jail, 2%	75	All admitted	Full psychiat. study, 98% Recommend. re dispos., none	None	Blood tests-syph., all Gonoc. smear, all E. E. G., 5	Wechsler, 450 Rorschach, few T. A. T., few	No interne training
Pretrial, 15% Posttrial, 85% All cases found guilty	Judges, 98% Prob. cases from other cities, 2%	Very few	Generally not admitted as evidence	Full psych. study, 95% Recommend. re dispos. made in only psychotics and defectives	Inpatients at Bellevue Hospital	None in clinic	Wechsler, ±1500 Rorschach, ±600 T. A. T., ±600	One psychiat. instructor in med school and lecturer in probation school Minimal use of clinic for student training
Pretrial chiefly	Judges almost entirely Dist. atty. may refer through judges	Rare, few murder cases	Not used as evidence	Full psychiat. study, 100% Summary sent court Specific recommend. re dispos. in some cases	Jail hospital	Blood tests-syph., nearly all Spinal fluid, a few E. E. G., a few	Wechsler, 575 Binet, some Rorschach, ±275 T. A. T., ±125 Rozenzweig, some Babcock Levy, ±125	Casual lectures to clubs No interne training

FIG. 1.—Continued.

can best serve the law by making contact at that level, rather than in the criminal court. The Detroit Clinic devotes a large part of its work to the study and disposition of traffic violators.

In one clinic, 90% of the psychiatric examinations are made prior to trial; in another, 85% are made after trial but prior to sentence. In one jurisdiction the clinic reports are always admitted in evidence; in another, this is rarely done. Some of these differences are due to the variation in criminal procedures in our cities and states. Many of them, however, result from the fact that these clinics generally originate somewhat haphazardly through the activity of a small group of interested persons who all too often are not sufficiently informed about medico-legal psychiatry. Despite the fact that such clinics have existed for 35 years, no publication has appeared in either psychiatric or legal journals discussing the purposes and principles on which these clinics should be founded.

As I see it, the relationship of psychiatry to criminal law has the wrong point of emphasis and the fault does not lie alone with the legal profession but partly with us. Tradition, or what the lawyers term precedent, long ago opened the door of the criminal court room to the expert in mental disease—but for the express purpose of advising in regard to the existence or nonexistence of insanity. Legalists have put us in our place, or perhaps better, kept us in our corner and there we have complacently stayed. Psychiatry has far more to offer justice than the detection of insanity, important as that may be—and difficult as that may be, when we are forced to make our examinations through lenses blurred by cobwebs.

If psychiatry is worthy of a place among the sciences of human behavior it should be better able than the law to detect motives, to measure the force of antisocial drives, to discover guilt-ridden individuals with an abnormal need for punishment, to evaluate the curative potentialities of punishment, probation, and psychotherapy in individual cases, and to determine levels of individual physical and intellectual capacity or incapacity. If the nation-wide legal acceptance of the dictum that modern justice and penology treat the criminal rather than the crime be more than empty, pretentious obeisance, then what psychiatry has to offer is the very meat of the business. We psychiatrists have no crystal balls and we are not infallible but our clinical training and our psychiatric experience, aided by an understanding of the revelations of adjuvant psychological tests, do give us a special insight into the offender's makeup and qualify us to express an opinion as to his reformability and his potential danger to society, as well as to the existence of mental disease.

Not for one moment do I advocate that we psychiatrists usurp the functions of the criminal court judge. Society has today as great a need for the judicial gown as it has for the priestly robe. But I do believe that the criminal court judge needs all of the technical guidance that he can get in selecting cases for probation, in formulating the conditions of probation in individual cases, and in determining the length and place of penal sentence. And today most enlightened judges will endorse this view. In the 2 decades that I have been doing this work, I have seen a very heartening change in the attitudes of the younger men who are now being called to the bench.

It is my practice in Baltimore to send my entire case study, which may run over 10 single-spaced typewritten pages, to the judge. I have two chief reasons for doing this—first of all this, in my opinion, is the best method of educating judges in criminal psychiatry. Secondly, I feel that a psychiatric report is only as good as the completeness and accuracy of its data and the cogency of its judgments. I am opposed to forcing our views on people as though they were oracular. On the other hand, I have no patience with the psychiatrists, who, although officials of the court, are too timorous to make specific and unequivocal recommendations in regard to the disposition of an offender whom they have examined. Courts not infrequently invite recommendations as to sentence from the defense and prosecuting counsel. How then can they, in justice, resent such advice from their own neutral psychiatric expert?

Let us consider briefly the chief methods

currently employed by criminal courts in this country in securing psychiatric advice other than that obtained through the court clinics, which we are discussing. First and foremost, there is the time-honored system of privately employed partisan experts.

Surely there is no need to present to this group the great dissatisfaction that exists with expert testimony. This was clearly brought home to me early in my professional career. Like most medical graduates I entered practice with complete ignorance of court procedures. One day I found myself before an Industrial Accident Commission on the case of a brewery employee who had, while unloading a truck, carelessly allowed a barrel of beer to roll down on his head with rather disastrous results. I had carefully examined the fellow and had reached certain definite conclusions. As I was waiting for the case to be called for trial, I spied an older and greatly respected medical colleague—a professor in the medical school and a former president of the State Medical Society. We found that we were on opposite sides of the same case. After discussing our findings, I learned that we were in complete scientific agreement. Naively and somewhat facetiously I said, "It is too bad that we both have to waste time here. Why can't we toss up a coin and decide which one of us testifies?" My wise and experienced colleague remarked, "It is true that we are in agreement now, but you wait—after your lawyer gets you to stretch the truth as far as it can be stretched without its breaking, and my lawyer gets me to do the same thing for his side, no one will have any idea that we are in essential agreement about anything, let alone about the prognosis." Then those remarks seemed like rank cynicism but I have learned that they merely represented a realistic view of partisan testimony, and we are grossly deluding ourselves if we do not admit it. Furthermore, such biased attitudes are unfortunately easily reconciled with the laudable philosophy of most physicians: Do not deny help to those who seek it.

Many people gain their chief impressions of psychiatry from the lurid newspaper accounts of partisan psychiatric testimony in spectacular criminal trials. And a pretty poor impression it is indeed. One of the greatest values of the court psychiatric clinic is that it practically puts an end to the battles of experts in criminal cases. Of course, either side has the legal right to employ its own expert witnesses, but experience has proved that this is wasteful and ineffectual because the court representative, chiefly because of his neutral status, has too great an advantage.

Then there is another common method of securing expert testimony. In most states the court may appoint an expert or group of experts to advise it in a specific case. This is at best a makeshift device with obvious defects. It is seldom used except in notorious cases, and all too often the experts are not experts at all, but merely physicians who happen to be held in high personal regard by the judge.

A third way in which expert opinion is obtained for criminal courts is the state-wide system of pretrial psychiatric examination such as the one in Massachusetts administered under the Briggs Law. Such a system has great merit but it also has serious defects. I found last year, when I had the opportunity of going over many of the reports with Commissioner Perkins, that the Briggs Law as now administered does only one thing effectively: it separates the psychotic offender from the rest. It gives pretty good assurance that an insane man will not be found guilty of serious crime, but it contributes to the court almost no understanding whatever of the psychological and emotional makeup of the accused. In fact, Commissioner Perkins has instructed his examiners to confine themselves to the issue of sanity. It should also be recognized that the Briggs Law, as administered, does not provide for a very wide use of psychiatric examinations in criminal cases, since only about 500 examinations are made annually—fewer than are made in Cleveland or Pittsburgh.

Then there is the system where certain cases are hospitalized for diagnosis. This is in force in Colorado, where the accused is sent to the Psychopathic Hospital for study whenever an insanity plea is entered. Its obvious defect is that the court does not have the benefit of psychiatric study in the great majority of difficult cases before it, but only

in those instances in which formal insanity pleas have been filed.

Now let us return to a consideration of court clinics. One practical advantage of the court clinic is that it is an official, accredited agency. It is the court's own clinic; its staff are members of the court team. In course of time, if the psychiatrist is a really competent man, he may become the trusted advisor of many of the judges and even of members of the bar with whom he has contact. That, of course, is something of a selling job—the kind of thing that many of the psychiatrists in the Army had to do and did with their commanding line officers.

I believe that with the proper organization the court clinic can adequately discharge most of the functions that these other systems serve, especially if the court psychiatrist has access to beds in a state psychopathic hospital where the most difficult cases can be intensively studied under his direction.

If you will again glance at Fig. 1 you will see that the scope of the Baltimore Clinic is unique, in that it is not a behavior or a psychiatric clinic, but the medical department of the courts. I have been unable to learn whether this was the result of chance or of rare prescience. In my opinion this concept of the court clinic has definite advantages. First of all, it accents the fact that psychiatry is a medical discipline and not some species of necromancy. I feel that psychiatry suffers in all areas and particularly in the medicolegal field, when it is divorced from medicine. Then, it offers the criminal court neutral, expert opinion in certain important medical but nonpsychiatric issues. Every year a number of defendants in domestic relations cases are sent to our office for examination. They are men who contend that as a result of recent physical disability they are no longer capable of carrying out the court's order to support their dependents. I realize fully how difficult it is to be an expert even in a single field of medicine and I do not presume to be one in anything but psychiatry. But I can and do refer these individuals to the proper tuberculosis clinic or to a specially well-qualified expert on hernias in one of the hospital dispensaries, with a note pointing up the problem. Reports are made to me and I interpret them to the court. Or I may be called upon to determine whether a witness, defendant, or juror is too ill to appear in court on a certain day. Here the answer may be obvious even to me, or I may need the help of the individual's own physician.

I was in part responsible, a few years ago, for having a statute passed making blood grouping mandatory in all bastardy cases in Baltimore. At first I did the grouping myself. But as time grew shorter and the technique became more involved, I gave this up so that now every case has A B O, M N, and Rh groupings carried out in the clinical laboratory of the University of Maryland Medical School. These reports are sent to the court through my office. By this means we are able to exculpate about one-fifth of the putative fathers in bastardy cases.

I feel that Justice's scales often measure too grossly and I believe that the finer balance of scientific procedure should be used unhesitatingly whenever it can add accuracy to the determinations.

Last year, as part of my task while acting as the psychiatric advisor to a committee of the United Nations studying the prevention of crime and the treatment of offenders, I drew up an ideal plan for the scientific examination of offenders prior to sentence. I recommended the establishment of a Scientific Legal Institute for the social, psychological, and medical study of the juvenile and adult offender. This Institute was to have 3 divisions: a social division, a psychiatric division, and a medical division. The social division, in addition to making recommendations in regard to the granting of probation and supervising individuals placed on probation, would obtain full and accurate sociomedical case histories in a high proportion of cases, permanently filed and made accessible to certain official agencies at any time. These records would be kept current and would not only be of value to the probation, parole, and penal authorities, but could also assist the courts in sentencing. The psychiatric division would be staffed by psychiatrists, psychologists, and psychiatric social workers. It would be equipped not only to examine but also to treat cases. In addition to the cases specifically referred for examination by the court or one of its agencies, routine pretrial examinations were recommended

in certain types of offenders: individuals charged with capital offenses, individuals 3 times charged with the same crime, and those charged with sex offenses, homicide, arson, bigamy, abandonment and cruelty to children, assault on wife, and turning in false fire alarms. Prior to trial a preliminary report would be furnished to the court, the prosecution, and the defense. This would be confined to 2 issues: whether the defendant was competent to stand trial and whether there was any doubt as to his responsibility at the time of the commission of the crime. After conviction, the full diagnostic and advisory report would be made available.

The medical division of this Scientific Legal Institute would act as the official, neutral medical agency advising the criminal court and its agents on medical problems of all types, including post-mortem examinations, blood grouping, alcohol determinations, stain identifications, presence of venereal infection, examination of injuries of complainants in assault and rape cases, ability of individuals to carry out the court's order to support, etc.

To the establishment of such an Institute there would no doubt be many objectors—lawyers, police officials, and post-mortem physicians, not to mention thrifty tax payers. Perhaps this is an ideal and will not come into being immediately, but in course of time some such evolution is bound to come. Undoubtedly, too, this evolution will give rise to various patterns. It seems to me one of the healthy characteristics of our American culture that our social institutions do not follow rigid stereotypes but are adapted to the local needs of the communities they serve.

Finally, let us outline what in our experience would be the practical professional organization of the adult psychiatric court clinic for a city with a million people. The director of such a clinic should be a competent general psychiatrist with special knowledge and experience in criminal psychiatry, as well as a man of courage and mature judgment. I maintain that criminal psychiatry is a specialty within a specialty, and that mere certification by the American Board does not give assurance of a competent advisory report in the most difficult and important aspect of the problem, that of disposition. Furthermore, because of current limitations in salary it is probably practical to have this position filled on a part-time basis, thus giving the director time for private practice as well as for teaching in law schools and medical schools. He should, of course, accept no private employment in any court in his own area. The clinic should also have on its staff a young full-time psychiatrist, or 2 part-time psychiatrists, who would do most of the routine examinations under the guidance of the director.

Here, because of limitations of time I shall not attempt to discuss the complex problems of therapy. Suffice it to say that the court psychiatrists should reserve some time for the treatment of selected offenders on probation. For I believe that no psychiatrist can continue to function at maximum efficiency unless he is carrying some cases for treatment.

The clinic should have at least one social worker, preferably a psychiatric social worker, whose chief function would be the preparation of a pre-examinaion case history. An alternative plan, followed in some clinics, is to have the psychiatric division intimately related to the probation department; where this system is in force the social investigation is conducted by a probation officer.

Then there should be at least 2 clinical psychologists. They should be competent not only to give such psychometric tests as the Wechsler-Bellevue, but also to use the projective tests, particularly the Rorschach and the T.A.T. I strongly advise that batteries of tests be given routinely in the examination of criminal court cases. In my experience, projective techniques are helpful in general psychiatric practice in evaluating the problem at hand and planning therapy. Since, however, much of the material will in due course reveal itself in a cooperative patient, the private psychiatrist may often dispense with the testing aids. But the court psychiatrist is pressed for time. He must give definite answers promptly; he cannot wait for a gradual evolution of rapport. And the projective tests are singularly useful in working with patients who are strongly moti-

vated toward conscious distortion of data as defendants in criminal proceedings are likely to be.

Where the court clinic is not only a behavior or psychiatric clinic but the court's medical department, it is highly desirable to have a part-time physician on the staff.

It is obvious that compensation must be fully adequate in order to get competent professional personnel to carry out the work of the court clinic, with its high degree of responsibility. It seems almost a caricature of the American scene to have a criminal court judge in New York City receiving an annual salary of more than $25,000, and a full-time psychiatrist, with his years of professional training and experience, directing the work of the psychiatric clinic for $6,450 a year.

The longer I work in this field, the more surely am I convinced that frontal attacks by psychiatrists on the existing and grossly illogical laws governing criminal responsibility are doomed to failure. In order to bring about the needed reforms, 3 things must be done. First, our own knowledge must be refined by competent research and better clinical studies. Secondly, the alienation which exists between law and medicine must be resolved. This can be greatly helped by the teaching of psychiatric principles in the law schools and the instruction of medical students in relevant legal fundamentals. Thirdly, and this I consider the most important of all, we need competent, conscientious psychiatric work, carried out in the scientifically favorable environment of the neutral court clinic, rather than in the hostile, distorting atmosphere of partisanship, in order to educate the bench and the bar as to what psychiatry really has to offer the law. Only when the legal leaders of this country develop an understanding of and trust in psychiatry and psychiatrists, can we hope for the reforms so urgently needed in the problems of mental disorder and the law.

A TEST WHICH PREDICTS THE CLINICAL EFFECTS OF ELECTRIC SHOCK TREATMENT ON SCHIZOPHRENIC PATIENTS[1]

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Previously we reported on a test of the autonomic nervous system in relation to electric shock therapy (1-3) and to anxiety (2-4). We have found this test which utilizes adrenergic stimulation (intravenous epinephrine) and cholinergic stimulation (intramuscular mecholyl) extremely useful in predicting the clinical outcome and showing the changes in the autonomic nervous system of patients treated with electric shock. In this communication we wish to report on the changes produced by electric shock on schizophrenic cases as compared with other clinical entities. We are reporting on 100 patients who were hospitalized at the Boston Psychopathic Hospital and were selected for electric shock treatment. There were 48 cases of schizophrenia, 21 of manic-depressive psychosis, 12 of psychoneurosis, 13 of involutional psychosis, and 6 had miscellaneous diagnoses.

Method

Under basal conditions, with the patient lying down, the blood pressure and the pulse were taken until constant for a 5-minute period. On the first day, the patient was given 1 cc. of normal saline intravenously, on the second day 0.05 mg. of epinephrine chloride in ½ cc. of water intravenously, and on the third and final day 10 mg. of mecholyl (acetyl betamethyl choline) intramuscularly. The systolic blood pressure was followed after normal saline and epinephrine until it returned to its preinjection level; after mecholyl the systolic blood pressure was followed for 25 minutes. From these values, graphs were constructed with the systolic blood pressure as the ordinate and the time as the abscissa.

Special note was made of sweating, tremors, flushing, pallor, and other autonomic phenomena. When the experiment was over the patient was questioned specifically about anxiety, especially whether it was similar to his spontaneous attacks. If the patient had anxiety as a phenomenon, we inquired whether or not it was relieved by mecholyl.

These tests were run within 3 days of the first electric shock and then repeated within 2 to 5 days after the last shock.

Results

Using the systolic blood pressure as the ordinate and the time as the abscissa, we have constructed graphs to visualize the changes in the blood pressure after the injection of the autonomic drugs. The epinephrine and mecholyl curves were superimposed as to time although they were obtained on different days. We were able, largely on descriptive grounds, to separate 7 different patterns of blood pressure response to the 2 drugs (Figs. 1-7). There were 6 cases (6%) that could not be classified in any of the 7 autonomic groups. These cases were excluded from the analysis.

It will be noted that there is roughly a reciprocal relationship between the height of the epinephrine response and the mecholyl response except in Group IV and Group VI. In Group IV there is a larger delayed reciprocal relationship. Eighty percent of the controls fell into Groups II and III, whereas

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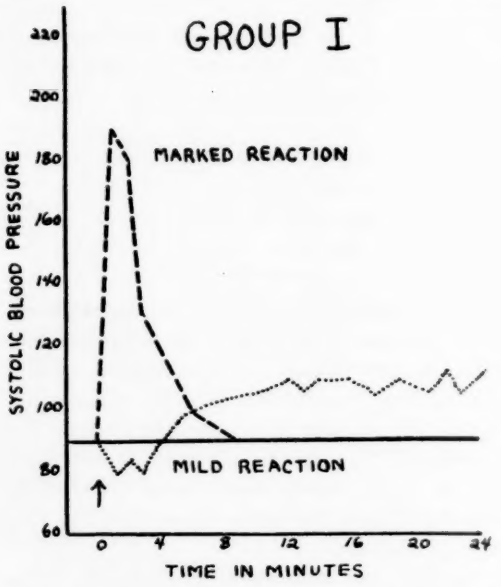

FIG. 1. Group I.—Epinephrine: Marked rise in systolic blood pressure with the return to preinjection level within 3 to 10 minutes. Mecholyl: slight fall in systolic blood pressure with early rise above preinjection level and failure to return to preinjection level during the 25-minute observation period (failure to establish homeostasis).

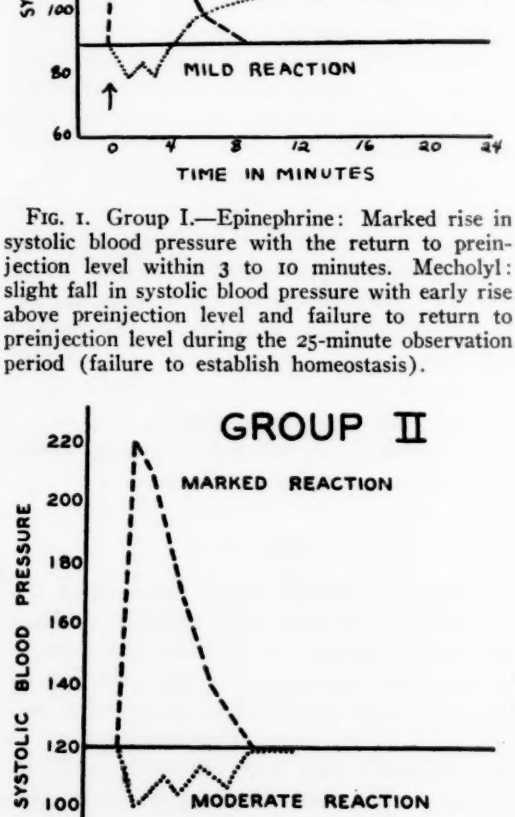

FIG. 2. Group II.—Epinephrine: Marked rise in systolic blood pressure with return to preinjection level within 3 to 10 minutes. Mecholyl: Moderate or slight fall in systolic blood pressure with or without slight rise above preinjection level but with the establishment of homeostasis, *i. e.*, return to preinjection level of blood pressure and maintenance of it, within the 25-minute period of observation.

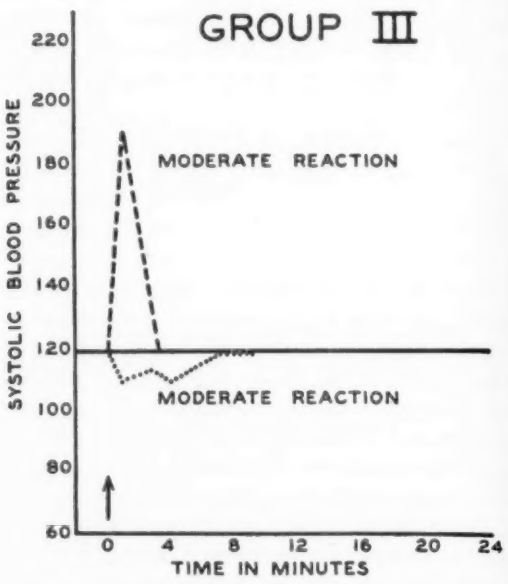

FIG. 3. Group III.—Epinephrine: Moderate rise in systolic blood pressure with return to preinjection level in 3 to 7 minutes. Mecholyl: Moderate fall in systolic blood pressure without a compensatory delayed rise before establishment of homeostasis.

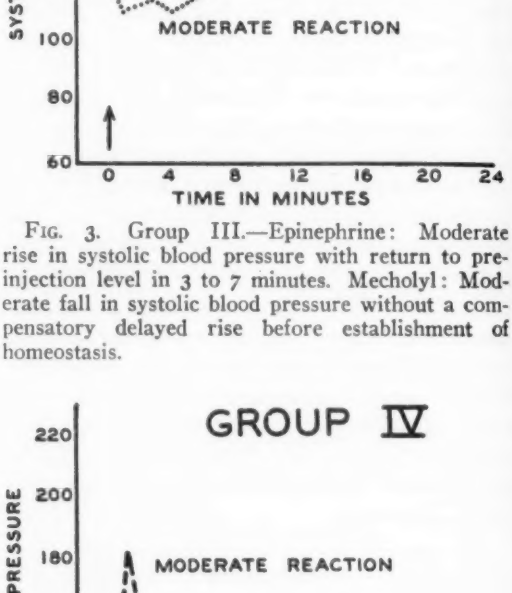

FIG. 4. Group IV.—Epinephrine: Moderate rise in systolic blood pressure with return to preinjection level within 10 minutes. Mecholyl: Moderate fall in systolic blood pressure with compensatory delayed rise before establishment of homeostasis within 25-minute observation period.

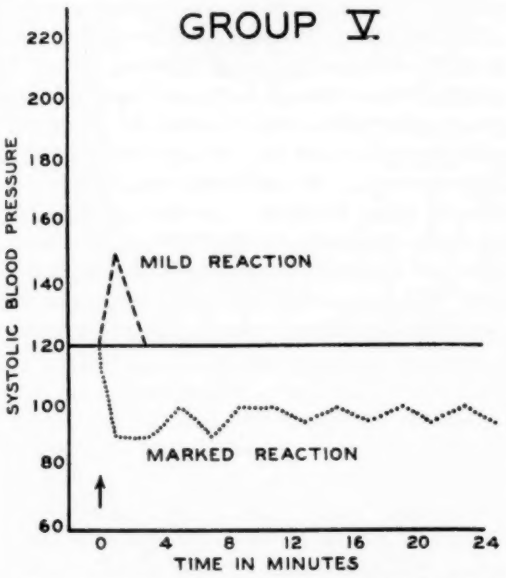

FIG. 5. Group V.—Epinephrine: Mild rise in systolic blood pressure with return to preinjection level within 2 to 6 minutes. Mecholyl: Marked fall in systolic blood pressure with failure to reach preinjection level within 25-minute observation period (failure to establish homeostasis).

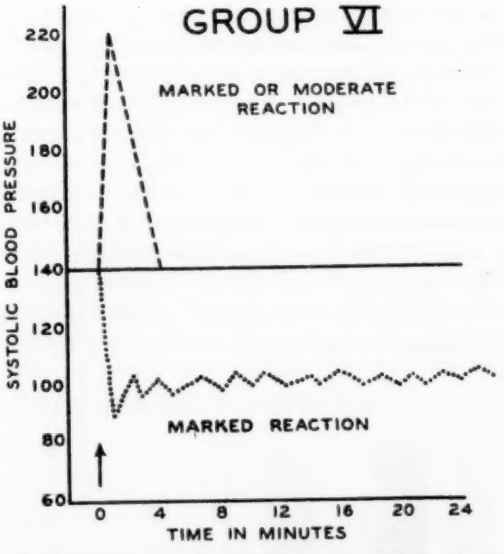

FIG. 6. Group VI.—Epinephrine: Moderate or marked rise in systolic blood pressure with return to preinjection level in 3 to 10 minutes. Mecholyl: Marked fall in systolic blood pressure with failure to reach preinjection level during 25-minute observation periods.

only 19% of the mentally ill cases fell into the same groups.

Types of Psychophysiological Response.—

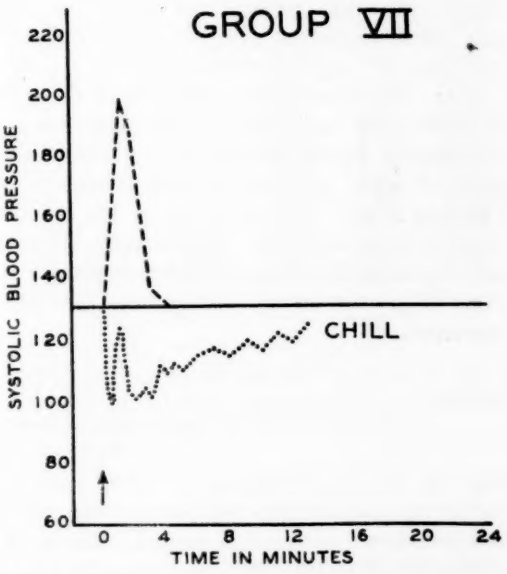

FIG. 7. Group VII.—In this group are included those cases in which "chills" occurred after mecholyl. A reliable blood pressure curve could not be established owing to noise engendered by the muscular contractures during the chill.

We have found 4 types of psychophysiological response:

(1) Those cases that have noticeable somatic manifestations after the drugs but do not have anxiety. Many mentally ill patients and by far the great majority of the controls fall into this group.

(2) Those cases in which anxiety was precipitated by either epinephrine, mecholyl, or both. In these cases the patients experienced anxiety similar to their spontaneous clinical attacks. This reaction is seen mostly in anxiety neurotic cases. However, one may find some schizophrenic patients with this manifestation as well as patients from other psychiatric categories. This response we term precipitable anxiety.

(3) Those cases that have constant fear and anxiety often associated with tremors. Epinephrine usually causes an increase in the severity of the tremors with some relief of the tension and anxiety. This reaction is best illustrated in the clinical picture known as an agitated depression. In a majority of such cases, after mecholyl a marked lessening of anxiety occurs and some cases, formerly insomniac, are able to sleep. However, the effect is short-lived and symptoms soon re-

turn. (In this group, one may also find any other diagnostic category such as schizophrenia or psychoneurosis.)

(4) Those cases that chill within 11 to 23 minutes after mecholyl. These chills are accompanied by chattering of the teeth and marked rigor and the patients complain of "feeling cold." The duration of the chill is from 3 to 10 minutes. This is seen in cases who often give a history of fear or anxiety. Any diagnostic category may have this phenomenon.

regardless of clinical diagnosis the cases that fall into blood pressure Groups VI or VII almost always respond to electric shock. In these groups there is a preponderance of the manic-depressive and involutional psychoses, which entities are well known to be responsive to shock. In schizophrenia, only 13 of the 48 cases fell into these two groups but, of these 13 cases, 12 improved with electric shock. Of the other 33 cases of schizophrenia that fell into other groups, only one was improved by electric shock. *In other words*

TABLE 1

RELATIONSHIP OF AUTONOMIC GROUPING TO CLINICAL DIAGNOSIS IN CASES GIVEN ELECTRIC SHOCK TREATMENT

Diagnoses	*N*	Groups I	II	III	IV	V	VI	VII	?
Schizophrenia	48	8	5	10	2	8	7	6	2
Manic-depressive psychoses	20	..	2	1	..	..	12	3	2
Psychoneurosis	12	5	..	1	1	..	3	2	..
Involutional psychosis	13	1	..	..	..	..	9	2	1
Miscellaneous	7	1	..	2	..	..	3	..	1
Total	100	15	7	14	3	8	34	13	6

THE AUTONOMIC GROUPS IN RELATION TO THE DIAGNOSTIC CATEGORIES AND THE RESPONSE TO ELECTRIC SHOCK TREATMENT

Table 1 shows the diagnostic categories of the cases under discussion. It should be noted that these are a selected group in which the cases represented were all considered as favorable for electric shock. In this selected group of cases, schizophrenia is the only entity that falls in all 7 blood pressure groups. We have found this to be true in a much larger series of cases disregarding those chosen for electric shock. However, there is an affinity of schizophrenia for Groups I and III. In contrast to this, the manic-depressive and involutional psychoses do not appear in all autonomic groups and show an affinity for Groups VI and VII. Cases of psychoneurosis appear preponderantly in Groups I and VI. (An unselected group of neurotic cases, however, shows an affinity for Group IV.)

It is interesting at this point to take into consideration the response of the different groups to electric shock. This is shown in Fig. 8. By "improved" we mean that the patient improved sufficiently to leave the hospital for one month. It will be seen that

when the schizophrenic patient has an autonomic grouping that corresponds to that of the great majority of manic-depressive or involutional psychoses he responds to electric shock. When the schizophrenic has an autonomic reaction that is in other blood pressure grouping than that of the great majority of manic-depressive and involutional psychoses, he does not respond to this type of treatment.

Autonomic Changes After Electric Shock Treatment.—Forty-one of 89 cases changed their grouping after electric shock. In 17 of the cases not changed, there was a marked

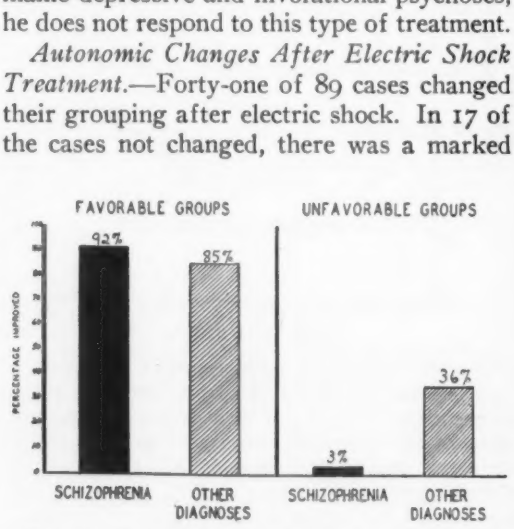

FIG. 8.—Percentage of clinical improvement of patients in the favorable Groups (VI and VII) and the unfavorable Groups (I, II, III, IV, V) following electric shock treatment.

change in the autonomic reaction although not sufficient to cause a change in the grouping. In general, the cases moved from the groups with the high numbers to the lower numbers. Whereas only 19% of the patients fell into Groups II and III ("normals" not under stress) prior to electric shock, afterwards 49% fell into these 2 groups. If no change in group took place, there was often no change in the patient clinically.

The autonomic changes responsible for a shift in grouping are seen in Fig. 9. If the schizophrenic patients improve, they show the same autonomic changes as the other diagnostic entities. If the schizophrenic patients do not improve, the same lack of autonomic change is seen as in the manic-depressive or involutional psychotic patient who does not improve. These favorable changes with electric shock treatment are usually associated with increased reaction to epinephrine, a decreased reaction to mecholyl, and a lowering of the basal blood pressure. These favorable changes occur with clinical improvement regardless of diagnostic label.

Of 28 cases showing no changes in their autonomic reaction, only 3 or 10% showed improvement; of the 66 cases showing autonomic changes, 46 or 70% showed improvement. This, too, bears no relation to diagnostic category; in the case of schizophrenia of 18 cases showing no change in the autonomic reaction, none showed improvement; of the 28 cases that showed autonomic changes, 12 showed improvement.

Effect of Electric Shock Treatment on the Different Psychophysiological Responses.—The effects of electric shock on the different anxiety factors are seen in Fig. 10; they bore no relation to the diagnostic category. For instance, if the schizophrenic patient had anxiety precipitated by epinephrine, he usually was made worse by electric shock the same as the neurotic with the same type of psychophysiological response. If, however, the schizophrenic patient, for example, had a chill after mecholyl, he responded dramatically to a few electric shocks as did the manic-depressive or neurotic patient with the same type of psychophysiological response. The 13 cases that had a "chill" after mecholyl showed a dramatic improvement after a few electric shocks. This improvement occurred whether the patient was diagnosed schizophrenia or not. An interesting fact about all these patients is that not one of them has returned to the hospital in the interim and the great majority are adjusting well in the community.

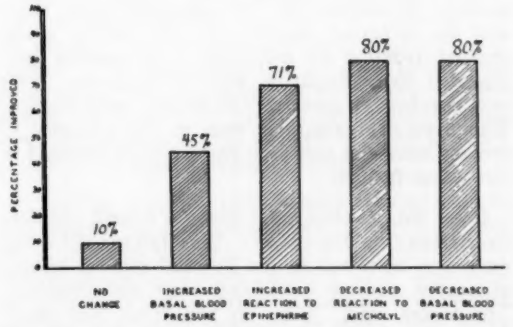

FIG. 9.—Relationship of autonomic to clinical changes following electric shock treatment.

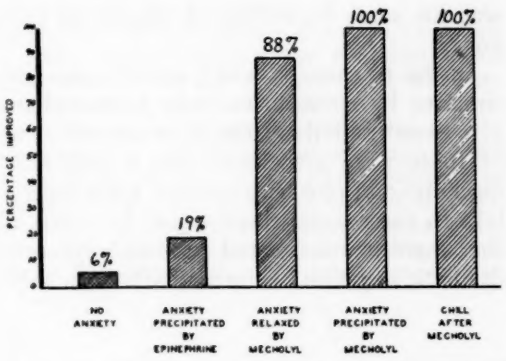

FIG. 10.—Effect of electric shock treatment on different psychophysiological responses of patients to autonomic drugs.

The 10 cases with anxiety precipitated by mecholyl all showed improvement with a disappearance of their anxiety and the absence of mecholyl-caused anxiety. Whereas these patients prior to treatment would interpret the reaction following mecholyl as almost unbearable anxiety, posttreatment the reaction following mecholyl would be described as "just a hot day." This effect took place whether the patient was schizophrenic or not.

In 25 cases there was a relaxation of constant anxiety by mecholyl. Twenty-two of these showed improvement after electric shock with the disappearance of previously constantly present anxiety. The long-term effect of shock in these cases was the same as the short-term effect of mecholyl. The effect of electric shock on this type of individual

was the same regardless of diagnostic category.

In the 16 cases in which anxiety was precipitated by epinephrine, only 3 showed improvement with this form of treatment. Two of these were associated with a chill after mecholyl and one with anxiety after mecholyl. In these cases there would be a loss of the anxiety precipitated by mecholyl or a dramatic negation of the chill after mecholyl, but the clinical attacks of anxiety remained. These could still be precipitated by epinephrine. In 13 other cases of anxiety precipitated by epinephrine, all became worse in that their anxiety became more marked, they often became confused, and in the case of schizophrenic patients they often became more paranoid and their behavior more disturbed.

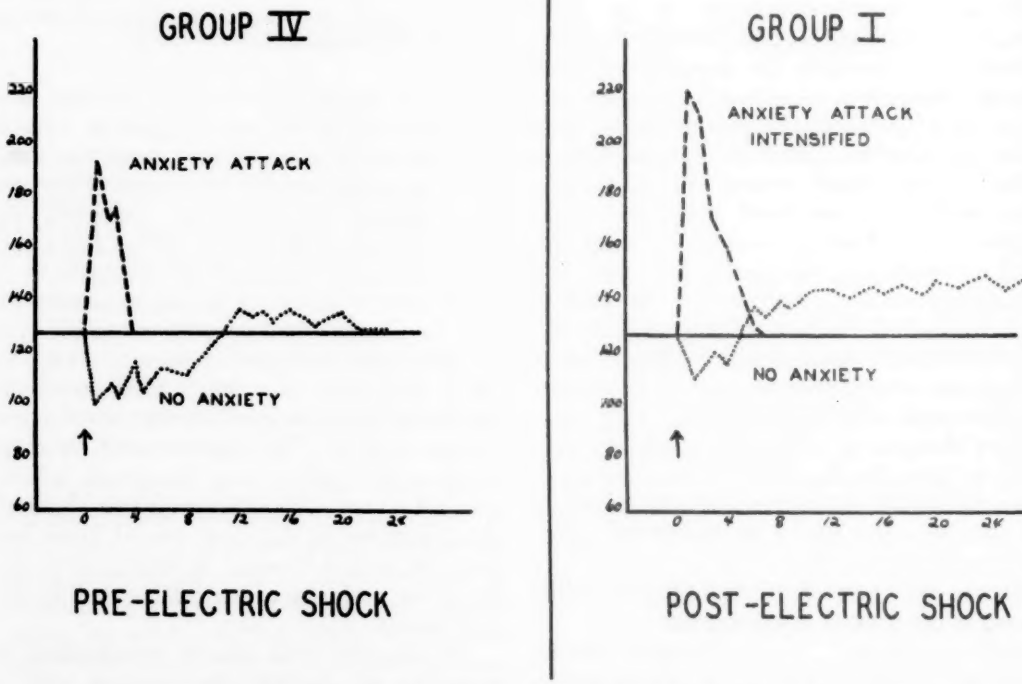

FIG. 11.—Clinical and autonomic changes in a case of schizophrenia whose anxiety was precipitated by epinephrine only.

Some illustrative cases follow:

CASE NO. 1.—*Fig. 11 (Group IV with Anxiety Precipitated by Epinephrine).*—A 22-year-old college girl with the acute onset of a psychosis characterized by blocking, anxiety, perplexity, and some paranoid formulation. There was a long neurotic history preceding the onset of the psychosis, and for a year she had been having frequent anxiety attacks. Preshock there was a moderate reaction to epinephrine with a delayed rise above the preinjection level after mecholyl with the establishment of homeostasis within the 25-minute observation period. Anxiety is precipitated by epinephrine. This is a type IV blood pressure curve associated with anxiety precipitated by epinephrine, neither of which factors usually respond to electric shock. After electric shock the patient's anxiety became more marked; she was extremely frightened, continued to have paranoid ideas, and remained perplexed. Postshock on the autonomic test, there was an increased reaction to epinephrine, a decreased reaction to mecholyl. The anxiety precipitated by epinephrine was more severe. This case eventually recovered following insulin therapy. This type of reaction is seen in the majority of anxiety neurotics and such cases usually respond in this same fashion.

CASE NO. 2.—*Fig. 12 (Group VI with Anxiety Precipitated by Mecholyl).*—This 34-year-old white male was admitted to the hospital with a history of severe anxiety associated with hallucinations. The voices said, "Who do you think you are?" "Are you a big shot?" He felt depressed and had intense ideas of reference. Preshock autonomic testing showed a moderate blood pressure reaction

to epinephrine with the precipitation of anxiety. There was a marked reaction to mecholyl without the establishment of homeostasis within the 25-minute period. Intense anxiety was precipitated by this drug. Given electric shock there was a prompt remission of his symptoms. Autonomic testing after treatment showed an increased reaction to epinephrine with a decrease in the basal blood pressure. There was a moderate reaction to mecholyl with the establishment of homeostasis in 10 minutes. Mecholyl no longer produced any anxiety in the patient. This case before shock showed a typical Group VI curve, which usually responds to electric shock. In addition anxiety was precipitated by mecholyl, a favorable psychophysiological response. This case happens to have been diagnosed as schizophrenia. However, we have manic-depressive and neurotic cases showing the same autonomic structure and they, too, respond to electric shock showing the same autonomic changes.

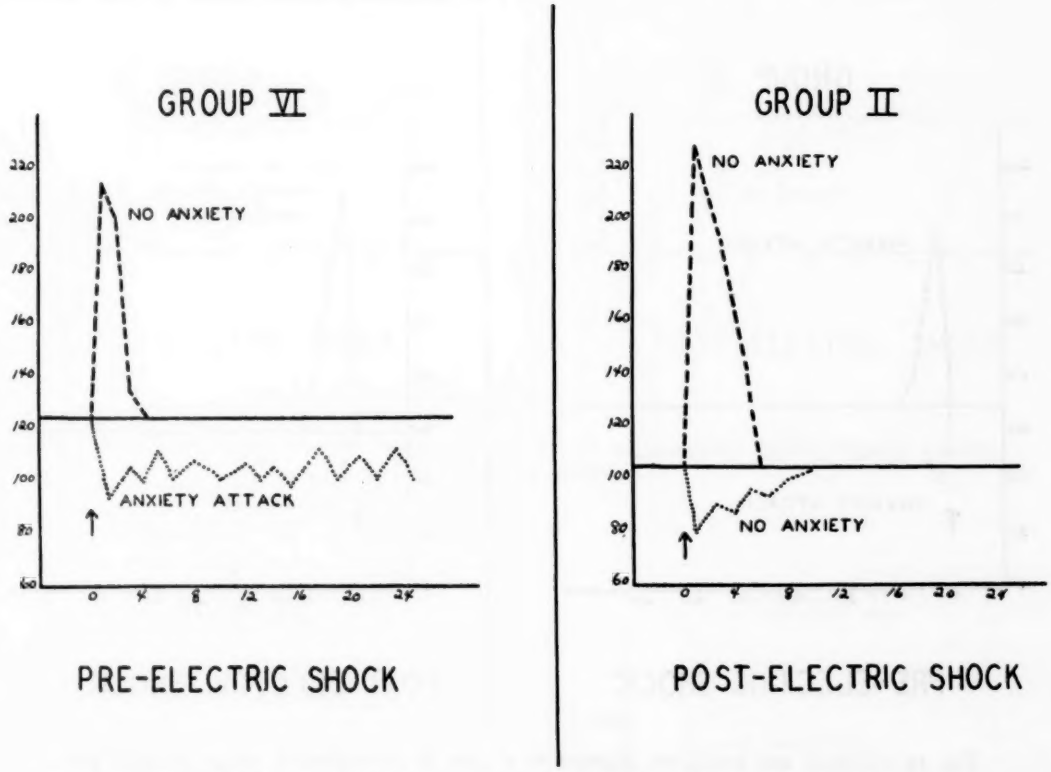

FIG. 12.—Clinical and autonomic changes in a case of schizophrenia where anxiety was precipitated by mecholyl only.

CASE NO. 3.—*Fig. 13 (Group VI with Anxiety Precipitated by Epinephrine or Mecholyl).*—A 28-year-old male who had a long neurotic history associated with anxiety attacks. He developed an acute psychotic episode during which he felt that he was being followed by spies, that every man wanted to attack him. He could tell this by their gestures and he lived in constant dread. There was, preshock, a moderate reaction to epinephrine with the precipitation of severe anxiety. There was a marked reaction to mecholyl in terms of blood pressure without the establishment of homeostasis within the 25-minute observation period. Severe anxiety was precipitated by mecholyl. This was a Group VI curve associated with anxiety precipitated by epinephrine and mecholyl. After 6 electric shocks, there was a marked decrease in his apprehension, and his intense ideas of reference completely disappeared. He continued to have frequent severe anxiety attacks but was no longer psychotic. Postshock there was a greater response to epinephrine in terms of blood pressure with the precipitation of more severe anxiety than prior to shock. There was a lowering of the basal blood pressure and a decreased reaction to mecholyl with the establishment of homeostasis after a delayed rise above the preinjection level. No anxiety is now precipitated by mecholyl. Postshock this was a Group IV curve. We have followed this case for over 2 years and he continues to have anxiety attacks spontaneously and following epinephrine. His psychosis has not recurred. This case has been diagnosed schizophrenia but we have seen other cases with different diagnostic labels in which the autonomic structure and response to electric shock were the same.

CASE NO. 4.—*Fig. 14 (Group VI with Anxiety Relaxed by Mecholyl).*—A 22-year-old colored male

showing constant anxiety and fear. He felt that the F.B.I. was going to kill him and was sure that that was the purpose of his being in the hospital. He heard voices accusing him of immoral acts. He stated that he had been followed for some months and that gestures made by people on the street had specific reference to him. He responded promptly to electric shock treatment. Preshock autonomic testing showed him to have a moderate reaction to epinephrine without an increase in his anxiety. There was a marked reaction to mecholyl without the establishment of homeostasis within the 25-minute observation period. Much of his tension and anxiety were relieved for about an hour following the mecholyl and he dozed on the table shortly after receiving this drug. This was a typical Group VI curve. In addition, constant anxiety was relaxed by mecholyl. Autonomic testing after treatment showed a marked decrease in the basal blood pressure, an increased reaction to epinephrine and a moderate reaction to mecholyl with the establishment of homeostasis. No anxiety was present. This is a Group VI curve and usually responds to electric shock. The great majority of manic-depressed-depressed and involutional psychotic patients have a similar type of curve, and they too usually respond to electric shock with similar changes in their autonomic curve.

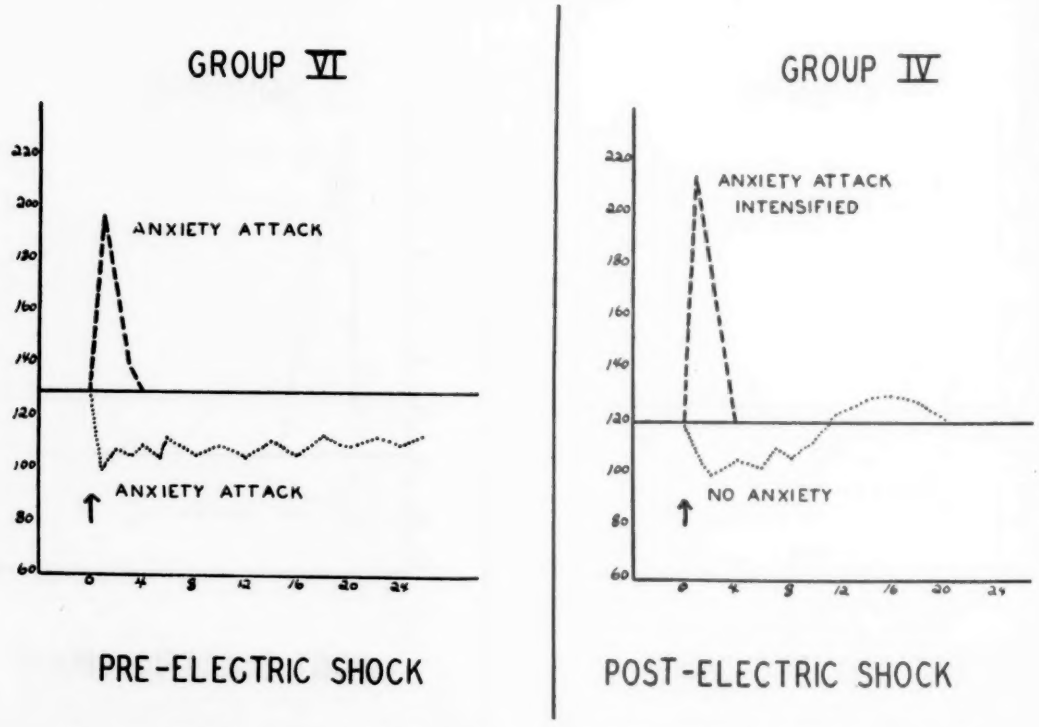

FIG. 13.—Clinical and autonomic changes in a case of schizophrenia whose anxiety was precipitated by both epinephrine and mecholyl.

CASE NO. 5.—*Fig. 15 (Group VII with a Chill after Mecholyl).*—A 28-year-old white male admitted to the hospital due to the acute onset of a psychosis characterized by intense religious preoccupation. Each time he went to church, the holy Virgin turned her head and spoke to him. She was accusing him of many things, which he said frightened him because they were untrue. He developed extreme anxiety, tenseness, and blocking. Two members of his family were schizophrenic. Preshock there was a moderate reaction to epinephrine without the production of any anxiety. There was a moderate reaction to mecholyl and 8 minutes later there was a severe chill lasting for 13 minutes. This was a Group VII curve. Following four electric shock treatments there was a marked improvement and the religious ideas and preoccupations were gone. On the autonomic test postshock we found an increase in the reaction to epinephrine, and a moderate reaction to mecholyl with the establishment of homeostasis at 11 minutes after the injection. Mecholyl no longer produced a chill. This patient has now been followed for 2 years and he is adjusting well in the community. This patient with this type of autonomic response happened to be diagnosed schizophrenic, but we have seen neurotics and manic-depressives with this same type of autonomic response and in every instance there was a prompt remission of the psychosis with a few electric shocks.

CASE NO. 6.—*Fig. 16 (Group V with No Anxiety before or during the Test).*—A 33-year-old white female who was admitted to the hospital in an acute psychosis several weeks following childbirth.

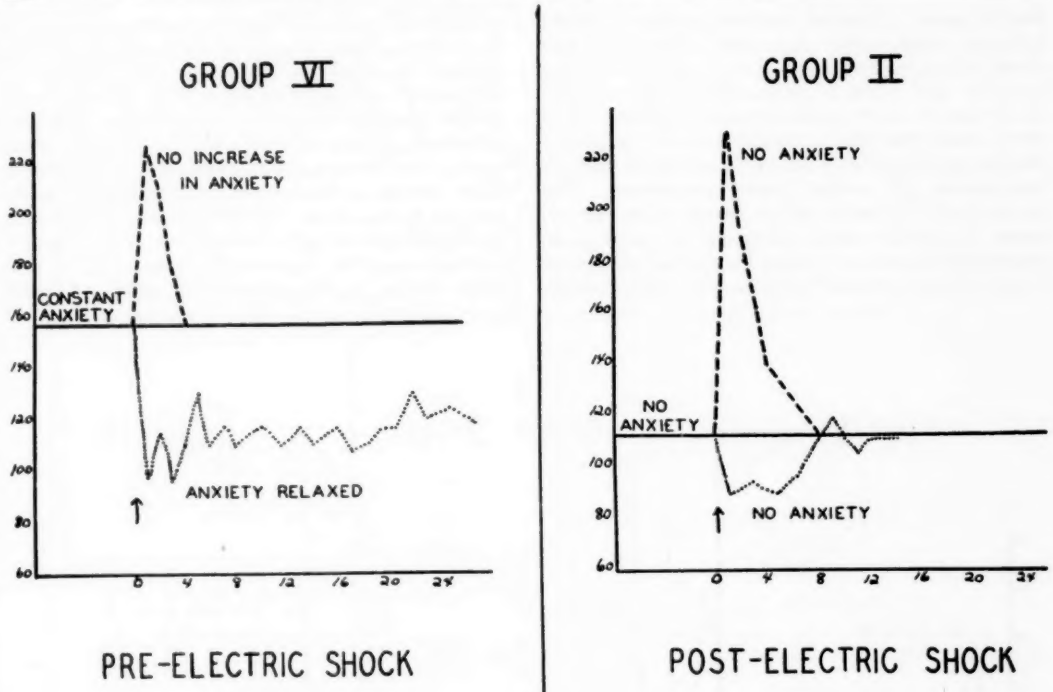

FIG. 14.—Clinical and autonomic changes in a case of schizophrenia whose constant anxiety was relaxed by mecholyl.

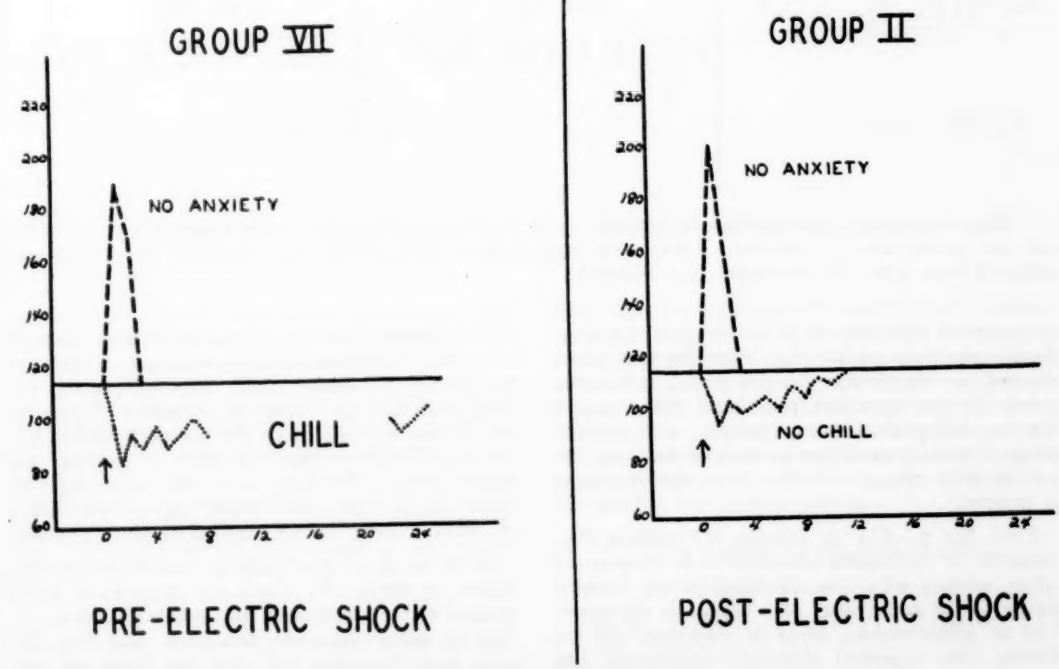

FIG. 15.—Clinical and autonomic changes in a case of schizophrenia in whom a chill was produced after mecholyl.

Her behavior alternated between catatonic stupor and wild excitement. She was hallucinated and often talked back to her voices. She had many delusions and ideas of reference. Two members of her family were schizophrenic. Preshock there was a small reaction to epinephrine with a marked reaction to mecholyl without the establishment of homeostasis. No anxiety was precipitated. This has a Group V curve, which usually does not respond to electric shock. The patient was given 20 electric shocks and showed a marked remission of all her symptoms. Five days after the cessation of treatment she relapsed to her original condition. Autonomic tests on the day after the last shock showed no significant change in the autonomic curve. It has been our experience that, even if the psychological picture changes with electric shock, if the autonomic curve remains the same, the patient will relapse shortly after the treatment is stopped.

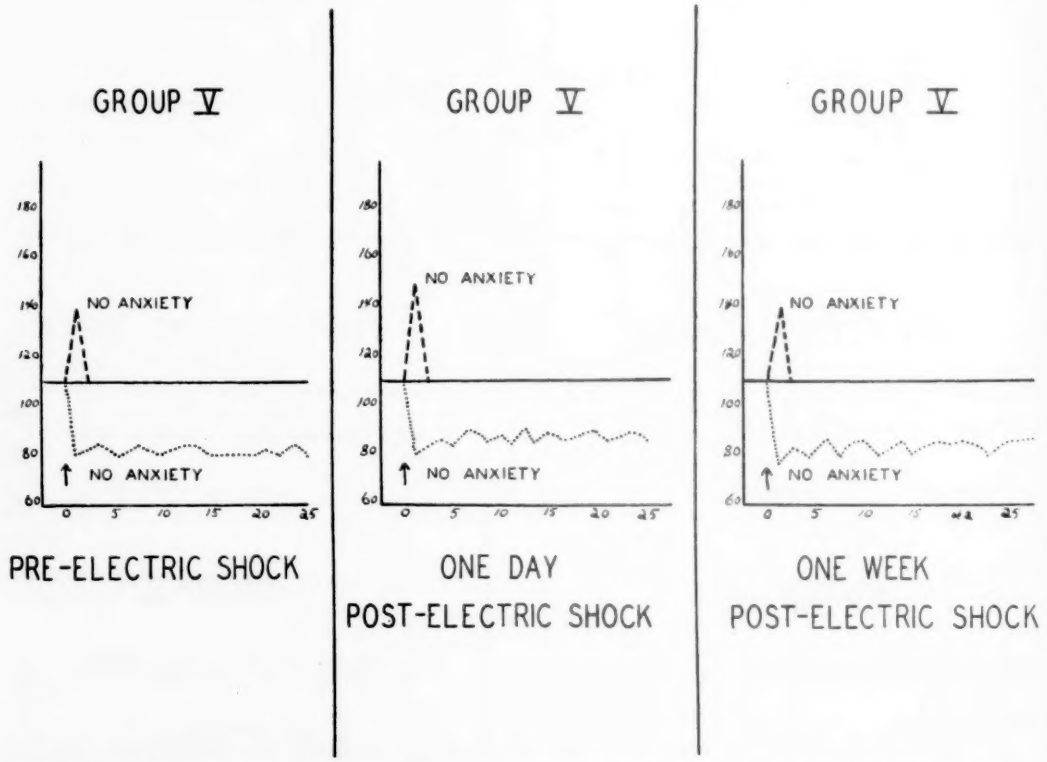

FIG. 16.—Clinical and autonomic changes in a case of schizophrenia in autonomic Group V without the precipitation of anxiety. Temporary psychological improvement was obtained but the patient relapsed soon after the treatment was stopped.

CASE No. 7.—*Fig. 17 (Group III without Precipitable or Relaxable Anxiety)*.—A 36-year-old white woman who was admitted to the hospital owing to the acute onset of a psychosis characterized by hallucinations, ideas of reference, and delusions. She appeared extremely frightened. She was given 20 electric shocks without improvement. Preshock her autonomic test showed a moderate reaction to epinephrine without the precipitation of anxiety. There was a moderate blood pressure reaction to mecholyl with the establishment of homeostasis 11 minutes after the injection. No anxiety was precipitated by the mecholyl. Postshock autonomic testing showed no significant change in the reaction to epinephrine, and there was a slight change in the reaction to mecholyl characterized by a rise above the preinjection level before the establishment of homeostasis. This patient showed a typical Group III curve. There was little change in the curve after shock. Patients with this type of autonomic reaction rarely respond to shock. This type of curve was seen in 80% of the controls not under stress. However, in this patient, although she appeared extremely frightened and it was difficult to secure her cooperation, her autonomic reaction was the same as controls not under stress. We have seen this same type of curve in patients with other psychiatric labels and they usually do not respond to electric shock.

CASE No. 8.—*Fig. 18 (Group I with No Anxiety before or during the Test)*.—A 30-year-old white woman with gradual onset of a psychosis characterized by many paranoid delusions. She felt that cars were following her, that the lights on cars had special significance, that her husband wished to poison her, and that pictures were being taken

of her as a part of this plot. She failed to respond to electric shock treatment. Autonomically preshock there is a marked blood pressure reaction to epinephrine without the precipitation of anxiety. After mecholyl there is a slight reaction with a rise of blood pressure above the preinjection level with a failure to establish homeostasis within the 25-minute period. No anxiety is precipitated. Postshock there is no change in the autonomic curve.

This is a typical Group I curve, which usually does not respond to electric shock. This case was diagnosed schizophrenia but we have cases of other diagnostic entities with this type of curve and they a marked increase in the constant anxiety. There was a marked blood pressure reaction to mecholyl without the establishment of homeostasis within the 25-minute observation period. The constant anxiety was markedly decreased as a result of the mecholyl. This is a Group VI autonomic curve associated with constant anxiety relaxed by mecholyl. This type of case we expect to respond to electric shock. However, there was also anxiety precipitated by epinephrine which we do not expect to respond to shock. Immediately postshock there was a decreased basal blood pressure, a loss of constant anxiety, an increased reaction to epinephrine

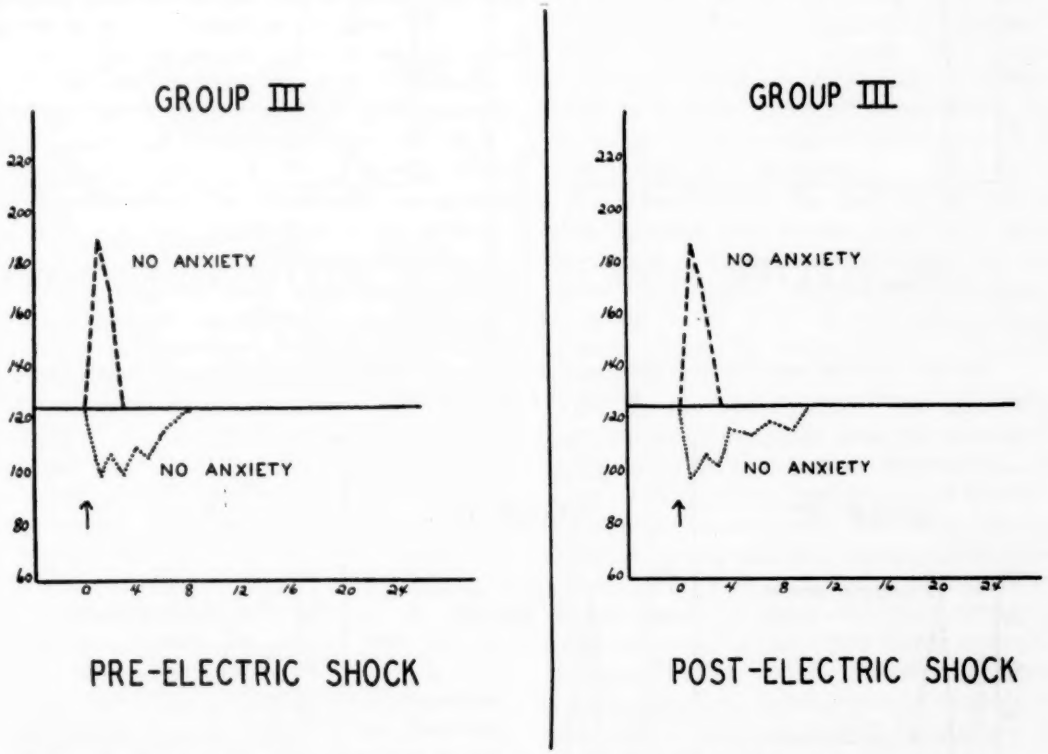

FIG. 17.—Clinical and autonomic changes in a case of schizophrenia without the precipitation of anxiety.

too failed to respond to this form of therapy. This type of autonomic group, in our experience, is least apt to respond to electric shock.

CASE NO. 9.—*Fig. 19 (Group VI with Anxiety Precipitated by Epinephrine and Relaxed by Mecholyl.*—A 30-year-old white male admitted to the hospital owing to the acute onset of a psychosis characterized by hallucinations, and the fear that other men would attack him sexually and then kill him. He had been married about a year before and had had severe anxiety attacks up to the outbreak of psychotic symptoms. Given electric shock his psychotic symptoms stopped but his anxiety attacks occurred frequently and with much severity. Ten days after the shock was stopped, his psychosis was again manifested. Preshock autonomic testing showed a moderate reaction to epinephrine with with the precipitation of more severe anxiety. After mecholyl there was a delayed rise above the preinjection level before the establishment of homeostasis. Ten days later when the patient had relapsed there was a return to the original curve. This case represents a combination of favorable and unfavorable factors, and in such cases we need much more experience in order to determine if we can predict the clinical outcome.

CONCLUSIONS AND DISCUSSION

(1) Individuals vary in their autonomic patterns. Seven patterns are described. Eighty percent of the controls not under stress fall into 2 autonomic groups that contain only 19% of the mentally ill. These

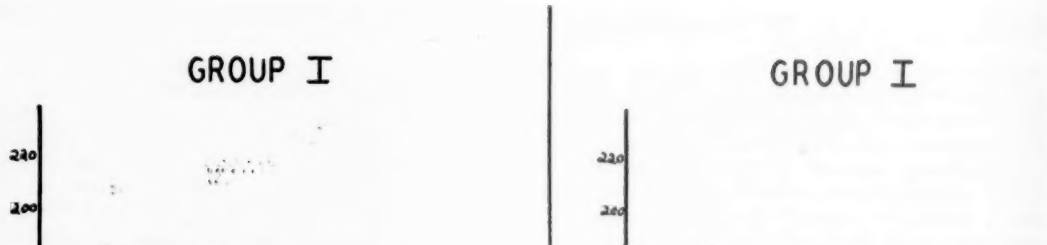

FIG. 18.—Clinical and autonomic changes in a case of schizophrenia in Group I with no anxiety before or during the test.

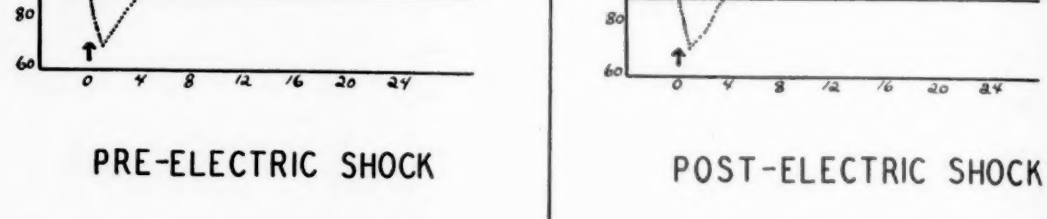

FIG. 19.—Clinical and autonomic changes in a case of schizophrenia with both favorable and unfavorable factors. The patient improved but relapsed shortly after treatment was stopped. In this case anxiety was relaxed by mecholyl but precipitated by epinephrine.

patterns can be altered by electric shock. (However, these changes are *not* specific for electric shock, as they occur with other modes of therapy and with spontaneous changes in the patient's psychological picture.) The question of cause will immediately come to the mind of many. With that question we are not concerned in this paper except to state that the psychological and physiological seem to be parts of the same process. When the psychological picture changes, the physiological picture changes and vice versa. They seem to fit as a "hand into a glove."

(2) The autonomic patterns are not specific for any diagnostic category. Of the clinical entities we have studied, schizophrenia alone covers all the autonomic groups. However, there is some affinity of certain diagnostic categories for particular autonomic groups, *i. e.*, the distribution is not random; for example, the great majority of Group IV are neurotics, the great majority of Group VI are agitated depressions or manic-depressive depressed patients. While schizophrenics fall into all groups, there is a preponderance of these cases in Groups I and III. Cases in Group V are usually diagnosed as dementia præcox, catatonic type. If the dementia præcox patient falls into Group VI or VII where the majority of the manic-depressives and involutional psychoses fall, he usually improves with electric shock; if, however, the schizophrenic falls into any of the other autonomic groups, he usually does not improve with electric shock.

(3) Our "psychophysiological responses" also appear to cut across clinical diagnostic labels. If the patient, schizophrenic or not, has anxiety precipitated by epinephrine, he is not likely to improve with electric shock. If, however, anxiety is precipitated by mecholyl, or relieved by mecholyl, or a chill occurs after mecholyl, the patient usually improves with electric shock regardless of the clinical diagnosis.

(4) There are definite autonomic changes with electric shock, *i. e.*, provided the clinical picture changes. These are: (a) increased reaction to epinephrine, (b) decreased reaction to mecholyl, (c) decreased basal blood pressure, and (d) changed blood pressure grouping.

We believe that the over-all effect of electric shock treatment is to lower the basal sympathetic tension, especially if it has been increased by the illness, and at the same time increase the reactivity of the sympathetic nervous system to stimulation. Decreased reaction of the parasympathetic nervous system to stimulation is often a corollary. We would like to emphasize again that these changes are physiological concomitants of the psychological changes and we have no evidence that they are in any way causal.

(5) If an anxiety component is present in terms of our test, the following are the likely changes following electric shock treatment: (a) anxiety precipitated by epinephrine is increased; (b) anxiety precipitated by mecholyl is relieved; (c) anxiety temporarily relaxed by mecholyl presages a good result with electric shock; and (d) a chill after mecholyl is abolished.

From our studies we can predict that a good outcome with electric shock treatment may occur in cases that show some of the following features: (a) initial autonomic grouping VI or VII; (b) anxiety precipitated or relaxed by mecholyl; and (c) a chill after mecholyl.

(6) A word of caution: The cases that were shown as examples were the most typical in order to give a clear impression. In many cases there is a combination of factors; for example, a person may fall into a "shock-sensitive" group and have anxiety of the type precipitated by epinephrine. Judging from the autonomic grouping, we might predict a good outcome; on the other hand, epinephrine-precipitable anxiety usually suggests a poor outcome. Much more experience is necessary in order to predict the changes in such complex cases.

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IS SHOCK THERAPY ON TRIAL?[1]

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Fully 10 years have passed since the introduction into this country by Almansi and Impastato, and later Kalinowsky, of one of the most important scientific advances to date in psychiatric treatment. Since the introduction of electroshock therapy, various modifications and improvements have evolved whereby it is now called "electrotonic" therapy, a well-deserved improvement in terminology. Through research the concept of electronarcosis was developed and more recently we have made another step forward with the concept of electropsychostimulatory therapy.

The great volume of literature that has grown up during this decade, confirming the original favorable reports of Impastato, Kalinowsky, and others, on the effectiveness and specificity of electroshock therapy in melancholy states, is well known to every psychiatrist and therefore there will be no attempt to review it. That is history written indelibly in the minds of well-informed psychiatrists all over the world. There are, however, a few psychiatrists who have been slow in embracing the newer physiological methods of treatment, insisting upon adherence to psychotherapeutic procedures alone. Some have gone so far as to insist that only psychoanalytic procedures should be used. Some have inveighed against the use of electroshock therapy, despite multiple proofs of its efficacy. These attacks have not been restricted to electroshock as a therapeutic method but have gone so far as to condemn the use of insulin hypoglycemic therapy, psychosurgery, and other physiological methods in psychiatry, although specific criteria for their use have been well established. The reasoning of the authors of these attacks has been very difficult for the majority of psychiatrists to understand, particularly those who have seen so many of their patients saved from attempted or actual suicide, or from the chronic contemplation of suicide of an indefinitely prolonged state of melancholia (a state described by some as "a living death"). Yet open attacks have been intentionally released to the press with the expectation that they would be given the widest possible publicity to the general public.

It is most unfortunate that sharp differences in opinion developed regarding the application of these new physiological advances in psychiatric therapy, while in the process of evolution, since the basic principles of treatment that evolved from the various shock therapies aimed at the enhancement of psychotherapy, irrespective of the particular label or school of thought that the individual psychotherapist used. Actually every one of the shock therapies aims at the amplification of rapport between patient and psychotherapist.

In the two major psychoses it is well established that the psychiatrist's influence in altering favorably the patient's mental aberration is reduced to a negligible quantity. The reason for this is obvious: (1) In the manic-depressive group the melancholia is so intense that it is beyond the patients' capacity to alter in response to suggestion, even though good rapport may apparently be established (the same statement applies to the manic type). (2) In the schizophrenic group, the well-known negativistic reaction, so strong in such disorders, precludes establishing rapport, for influencing the patients' thinking toward normal trends; and even in the rare case where the psychiatrist may err in believing he has established good rapport, the fixed delusions without insight, which the patient is powerless to alter, prevent the psychiatrist from helping the individual to reassume normal realistic thinking.

From the time of its inception, those who originated shock therapy, namely Sakel and his co-workers, recognized that this new therapeutic instrument made possible rapport

[1] Read at the 105th annual meeting of The American Psychiatric Association, Montreal, Quebec, May 23-27, 1949.

Dramatic developments that followed 24 hours after the presentation of the original paper warranted a radical revision and reediting of certain portions of the original version.

in those types of psychotic reaction in which it could not otherwise be established.

A year ago at the round table on shock therapy at the Washington A.P.A. convention, a colleague (Dr. Louis Loeser) and myself called attention to some of the striking modern developments for the welfare of mental patients, as well as certain innovations in our treatment philosophy in psychiatry. It was noted that ambulatory (or outpatient) shock therapy, introduced by Abraham Myerson, is now being successfully administered by psychiatrists in all parts of the country. We pointed out that over 850 patients were given electroshock therapy on an ambulatory basis during 1947 in one state alone (New Jersey). Since this state boasts less than 3% of the nation's population, if the other states averaged the same ratio of ambulatory treatment, this would mean that upwards of 29,000 persons would have been saved from the stigmatizing effect of institutionalization and in many the loss of their jobs as a result, in one year. This is indeed social progress!

Formerly more than two-thirds of these cases treated in New Jersey would have been committed, yet 70% actually recovered sufficiently to resume their former roles in the community, *without institutionalization.* Suicides are now rare, in our experience, because the danger of suicide in melancholy persons is usually obviated by the time the third or fourth treatment has been administered, although from 8 to 12 treatments are a necessary course for the average case, and some require up to 20 treatments. We estimated therefore that the rate of suicide in our practice has declined 80% to 90%, and our colleagues reported similar encouraging statistical estimates.

We, therefore, unhesitatingly expressed our belief that the use of electroshock therapy on an ambulatory basis is a distinct advance in the private practice of psychiatry and, in the hands of competent, adequately trained psychiatrists, should be encouraged. These newer physiologic methods, supplementing and enhancing the effects of indispensable psychotherapy, have opened up an entirely new vista of hopefulness in the therapy of melancholia with a concomitant reduction in suicides.

That opinion was emphatically reaffirmed in many hundreds of individual letters written to me by psychiatrists from all parts of the U. S. and Canada. These came as a result of a nation-wide poll of all A.P.A. members, which includes all of those having everyday experience on which to base their opinions. These statements were received from doctors who had studied newspaper reports adverse to shock therapies, and also a letter written by the author to one of our better known newspapers. In that letter it was pointed out that persons suffering from mental illness may be adversely affected by certain types of newspaper publicity regarding psychiatric therapy; attention was called to the extensive use of electroshock therapy in psychiatric hospitals throughout the country today; and Dr. A. E. Bennett's statement was quoted: "Since electroshock is a near 'specific' in the treatment of affective disorders, and full or social recoveries run as high as 80 or 90%, use of this therapy on a large scale can be expected." This assertion has become fact today!

The chief purpose of this paper is to bring to your attention the striking response shown by Members and Fellows of the A.P.A., giving frankly their reactions to these published statements. Readers would be astounded if they could possibly take the time to read and digest all of these replies, which came from psychiatrists in every corner of the land. The letters reflect many years of experience by each writer, the great majority of whom had been practicing psychiatry *before* shock methods were perfected, and therefore had had ample opportunity and time for comparison before expressing their convictions regarding the use of physiological methods supplementary to psychotherapy.

Of the hundreds of psychiatrists who gave generously of their time and considered thought in writing me, the statistical record stands as follows: *Psychiatrists* who are members of the A.P.A. *approve wholeheartedly* and in most instances in very positive manner, the procedure of *electroshock therapy* when applied to properly selected psychiatric cases, *in a ratio of 4 to 1.*

The enthusiasm of the profession for electroshock therapy can be shown graphically.

If those who replied from all parts of the United States are charted on a map (Fig. 1), this striking fact becomes apparent: Psychiatrists in all those states that reported opinions predominantly favored the use of shock therapy, where indicated, and in some states the statistics ran as high as 13 to 2; 15 to 2; 22 to 4; 31 to 7; 8 to 0, and 18 to 0 in favor of electroshock. This consistently favorable observation that shock therapy is efficacious,

In all the other states reporting, 41 altogether, a majority of psychiatrists expressed approval of electroshock therapy, most of them in glowing and emphatic terms. In the shaded states the majority vote was favorable and the majority was of such preponderance in some states that the rating is given. Note that Wisconsin and Washington ratios are high (8/0; 9/0); that New Jersey's is 15/1; while Virginia rates highest of

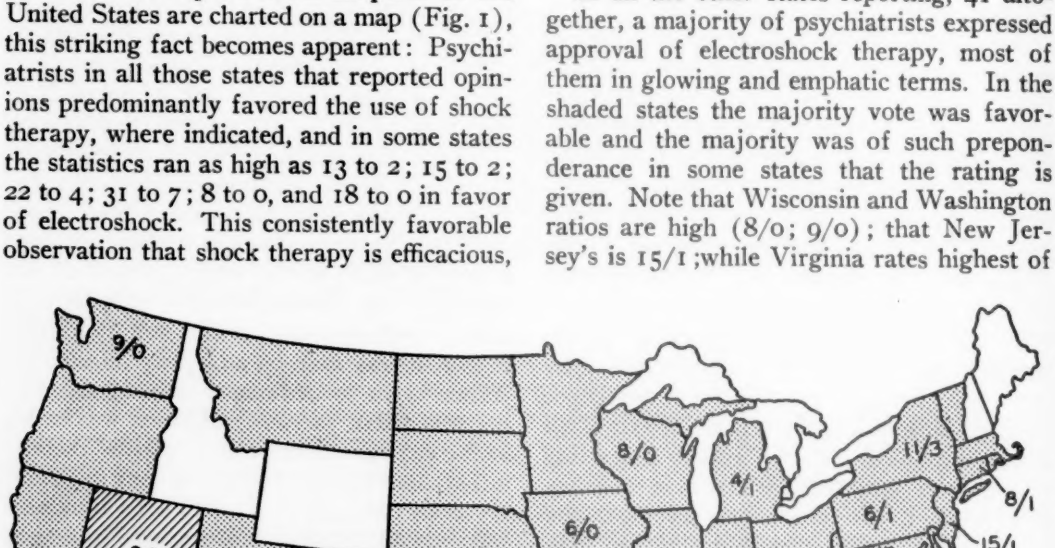

FIG. 1.

by psychiatrists with all the variations in viewpoint one might anticipate, all over the country, proves conclusively *that it is the considered opinion of most psychiatrists that electroshock is a valuable therapeutic agent.*

Fig. 1 shows that reports were received from 43 states. Only 5 states failed to express any opinion pro or con. Only one state opposed the use of electroshock therapy by vote of its one reporting psychiatrist. The statistics might be different if there had been a greater response from that state. In only one state was the vote neutral, namely Kansas, where the ratio was 1/1.

all (19/0). The states opposing electroshock therapy are conspicuous by their absence.

Doubtless many readers will be anxious to know the content of the letters sent to me by our colleagues. If published, these would fill a sizeable book, and the excerpts alone of statements that are striking and educationally essential comprise 70 single-spaced typed pages. Thus you will realize the impossibility of publishing all of them. You will be interested in a few short excerpts, anonymous, of course.

A. I heartily agree with your viewpoint. . . . . More and more psychiatrists now belong to a

physiological school of psychiatry which is growing so rapidly that the "pure psychiatrists" are being swept off their feet. . . . . Electric shock therapy is being demanded by the patients themselves. However, there is definitely a campaign on to embarrass those physicians who use this form of treatment. . . . . Although psychoanalysis has taught us considerable about mental processes, it has failed to uncover the etiologic agent . . . . (From a deep Southern state)

B. I have been administering convulsive therapy since 1936 and I have given perhaps 6,000 treatments. . . . . As to the use of electroshock in depressions, I cannot see how anyone with any experience can question the almost specific nature of this treatment. . . . . Have not had a single depressive who did not either recover or markedly improve under electroshock therapy. . . . . Whatever we may think about there being no stigma attached to having been in a state hospital, the fact remains that a great and vociferous segment of the population practically ostracises former institutional patients, a factor which may actually tend to precipitate recurrences of depressions. . . . . (From the far West)

C. There are many psychiatric disciplines, all of which claim priority for therapeutic effect. None . . . . have yet scientifically explained the etiological factors of mental illness. . . . . I have seen little or no results with psychoanalytic therapy in the psychoses, or in some of the psychoneuroses; therefore, when electroshock, insulin shock, and prefrontal lobotomy produce results far beyond what we could produce before, I thoroughly believe in their use. . . . . (Mid-South)

D. Everybody with any experience knows that electroshock therapy has a definite place in the treatment of certain disorders. . . . . (South)

E. . . . . Psychiatrists who have had little experience in the physical treatments condemn them with dogmatic statements. . . . . It is high time a group of "150 psychiatrists" who are competent in passing judgment upon electroshock treatments should come out with a statement to the profession recommending these because of their merit. . . . . I do hope you will start the ball rolling. . . . . (East)

F. There may be justification for exhorting some psychiatrists not to neglect psychotherapy, in their enthusiasm for other forms of treatment, but it is certainly unfortunate if the result is to confuse the public and make people suspicious of treatments that have proven of value. . . . . (Mid-West)

G. There can be no doubt that electroshock therapy shortens the illness and perhaps also deepens the remission . . . . they have to be followed up by psychotherapy to make the job complete. . . . . (Mid-West)

H. . . . . I have been superintendent of a private mental hospital for 26 years. . . . . To me electroshock therapy (we have given over 10,000) is a God-send. . . . . (Mid-West)

I. . . . . Electric shock therapy is good and wise treatment in affective disorders. It makes these patients amenable to psychotherapy, which is important. . . . . I don't feel that their improvement could be brought about with psychotherapy alone. . . . . (East)

J. . . . . I have had hundreds of cases. . . . . It is as safe as any other treatment. When properly administered, it is good office procedure in most cases. . . . . (East)

K. . . . . The rapidity of cure, the economic saving (it is possible for patients to pursue their usual vocations while under treatment), and the salutary effect on the rest of the family, all make this treatment worthwhile. . . . . I believe that the men of the psychoanalytic school resent any measure curtailing their practice. They fail to appreciate that psychoanalysis is but one method of treating mental illness. . . . . (East)

L. . . . . I have used shock therapy constantly and feel that it saves a great deal of time and expense to the patient. . . . . I use psychotherapy also, and have many cases now under analysis. . . . . (East)

M. . . . . It is unfortunate that a therapy which is capable of as much good and constitutes an important advance to psychiatry of our day should be exciting at this time publicised unfavorable comments. . . . . It is not just accidental that these criticisms arise primarily from psychoanalytic sources, although by no means are all psychoanalysts opposed to shock therapies. . . . . The success of the shock therapies in the psychoses is a bit of evidence tending to undermine the psychoanalytic interpretation of the so-called functional psychoses. . . . . (Far-West)

N. . . . . I, for one, (at our present stage of psychiatric knowledge) would not give up shock therapy . . . . it surely provides a quick method of getting your patient in condition to do some psychotherapy. . . . . I know of no other method by which dementia præcox can be given any chance at all unless it is with "deep insulin shock." Will psychoanalysis or any other form of therapy do as much? . . . . (East)

O. . . . . Have given about 20,000 electroshock treatments and had fine results, no bad effects. . . . . (Mid-West)

P. . . . . I have directed the use of electroshock therapy in 11 mental institutions for the past 6 years. . . . . We have treated 4,649 patients with very gratifying results. . . . . We have found by its use we can shorten the illness very materially in the affective disorders and improve the behavior in the more chronic and malignant forms of mental illness. (Northwest)

Q. . . . . After all, the results that we obtain are the best proof of the value of electroshock . . . . a treatment which needs no defense. . . . . (Mid-South)

R. . . . . Electroshock is of value in most mental disturbances. In fact, after having given some 50,000 treatments. . . . . I have encountered very, very few cases in which the patient's illness was made worse by it. . . . . A depression or confusion or intense tension clamors for relief. . . . . It spells the difference between the patient's continued insti-

tutional care, and the opportunity to return to his own home . . . . generally speaking, electroshock is the one great hope for the mental patient. . . . . (South-West)

When treating a known suicidally inclined patient, the newly coined concept of "the calculated risk of therapy" can be reduced to a very low minimum when electrotonic therapy is administered right from the start, analogous to an emergency appendectomy that is often life saving. If the conservatives in our ranks would follow this principle in treating their patients the suicide rate would be even further reduced. These doctors would certainly demand the emergency appendectomy, when indicated for themselves.

As a user of electroshock therapy since very shortly after its introduction in the United States, and more recently of electrotonic therapy applied by the Reiter Electrostimulatory Method, I want to give you some of my observations during 9 years of experience. During this period there have been *no fatalities.*

Since we are all painfully conscious of the problem of the suicidal patient it is apropos to discuss the suicide question to some extent. As already mentioned *the suicide rate has dropped* considerably *since the introduction of electroshock therapy,* and there seems to be a rather definite and steady decrease in the rate of suicide, *concomitant with the increase* in the use *of electroshock therapy* throughout the country.

You will note from the table of death rates from suicide during the past 18 years that there has been a significant drop in the rate during the past 6 years compared with the previous 9 years. The latter correspond roughly to the pre-electroshock era—that is, 1931 to 1940, while 1942 through 1947 covers the period during which electroshock therapy was effecting a reduction in the rate of suicides.

Now, if we poll the rates for the two periods and compare them we find that during the 10 years before electroshock therapy began to reduce suicides the average was 15.23 per 100,000 while during the 6 years since, the average has been 11.0 per 100,000. It is therefore apparent that, since electroshock therapy came into use, a reduction of nearly 25% has occurred in the death rate from suicide; and undoubtedly the rate may be further decreased as the use of electroshock therapy for potentially suicidal melancholy persons becomes still more general.

Those inclined to split scientific hairs might raise some question about the percentage reduction in the suicide rate herein suggested, but we are not insisting on exact percentages. *It is important, however, that we possess a treatment that we know reduces the frequency of suicides.* Any therapy that accomplishes this is important and should be fostered. It brings about a marked improvement in the morale of practicing psychiatrists today, when they know that by this means they will keep at a basic minimum the disturbing frequency of suicide in acute melancholy breakdowns. To all psychiatrists that is an unpleasant experience they would like to avoid, and which was far more frequent in their practices before the shock therapies came into use 15 years ago.

TABLE 1

DEATH RATES 100,000 POPULATION FROM SUICIDE

United States, Registration States, 1930-1947

Year	Death rates
1947 *	11.2 †
1946 *	11.5
1945 *	11.2
1944 *	10.0
1943 *	10.2
1942 *	12.0
1941 *	12.9
1940 *	14.3
1939 *	14.1
1938 *	15.3
1937 *	15.0
1936 *	14.3
1935 *	14.3
1934 *	14.9
1933 *	15.9
1932	17.4
1931	16.8
1930	15.6

* Continental United States.
† Estimated.
Note: 1940-1947 excludes deaths among armed forces overseas.
Source: National Office of Vital Statistics.
Statistical Bureau.
Metropolitan Life Insurance Company.
November 15, 1948.
N-9.

Many theories have been proposed to explain the *modus operandi* whereby electroshock therapy brings about improvement in

melancholy states or in delusional states. Yet up to now, no theory has been accepted, and none has been scientifically proved. I am at this time adding one more to the 50 already mentioned by another author (Gordon).

It is my belief that the electrostimulatory effect acts directly upon the pituitary gland and, via electrochemical processes at present not understood, a change is produced in pituitary biochemistry resulting naturally in changes in the thyroid, adrenals, gonads, and other glands of internal secretion. These changes are presumably tonic in nature, that is, there is produced improvement in the quality of the work done by the chemical messengers put out by these various glands. If, for instance, we conceive that the pituitary is functioning at a level of 50% or 55% or even 60% in a melancholy or depressed condition, perhaps through electrostimulatory therapy the functioning capacity of this gland is gradually raised to 70% or 75% or perhaps even up to 90% of its original efficiency. Just what hormones are involved we do not know, but there may be some relation to the "inhibin" we hear endocrinologists talk about. In fact, we do not know whether it may be possible for electricity to produce entirely new hormones within the pituitary gland—substances as yet unknown to us. That certain pressor substances are produced by electric stimulation of the pituitary, which in turn increase the production of cortisone in the adrenals, is another possibility.

One factor that would tend to corroborate this suggested theory is the following: We know that very frequently during melancholy states both in males and females there is a complete loss of, or a very marked reduction in, libidinous drives. Men very frequently tell you that they have been completely impotent for the duration of their severe melancholia. Now it is quite impossible that electroshock therapy could induce a return of potency through stimulation of the gonads, except insofar as this stimulation was indirect via the pituitary gland. And it is well known that in many cases there *is* a return of potency as the effects of electroshock or electrotonic therapy become evident to the patient, synchronous with improvement in emotional reaction, animation, etc.

Another well-known phenomenon during mental breakdowns is amenorrhœa. Similar theoretical implications could apply here, for it is well known that menses usually return to a normal rhythm as the melancholia clears up, unless the menopause has occurred.

This assumed disorder within the pituitary during depressed states may be conceived as similar in many respects to the partial destruction of the Islands of Langerhans in the pancreas in diabetes mellitus. Whatever the cause of the postulated lesions that may exist in the pituitary, electrostimulatory therapy brings about a partial or, ultimately, possibly a complete recovery of the reduced or lost function, just as occurs in cases of diabetes when insulin is given, thus reducing the load that the partially injured pancreas is expected to carry. This in turn allows what is left of the Islands of Langerhans to regenerate, insofar as possible. It is quite within the realm of possibility that the pituitary indolence in psychiatric disorders has developed along lines analogous to Selye's "alarm reaction," via the route of emotional traumata.

When we get into the sphere of schizophrenia wherein it might seem a little more difficult theoretically to explain therapeutically efficacious results, one can still point to the fact that schizophrenics are definitely lacking in erotic drives compared with the average normal person. While it is well known that electroshock therapy is no panacea for schizophrenia and at best the therapeutic effects are only partial, nevertheless it can be pointed out that in those partially improved cases, if one has taken the time and trouble to secure a careful history before and after treatment, some degree of improvement in libidinal drives may be demonstrable following electroshock therapy. It would of course be rather difficult to establish just what proportion of such improvement in libidinal drive was the result of improved thyroid function or improved adrenal function, or more specifically improved gonadal function. Nevertheless it is reasonable to assume that whatever improvement there is could be on an endocrine basis rather than a purely psychic basis.

Another feature you are all familiar with is the frequent complaint so many melan-

choly persons express, that there is a feeling of a tight band encircling the head. This phenomenon, vague though it may seem as to causation, possibly could be initiated by pressure variations within the pituitary as related to its fixed housing the sella turcica, transmitted via sensory nerves to the scalp surface. One of the earliest marks of improvement following shock therapy may be that the patient no longer feels this tight band around his head. We should keep in mind that, despite variable methods of applying electrodes, it is impossible for the electric current to avoid stimulating the pituitary gland as it passes from one electrode to the other, through the skull.

The author realizes that missing links in the theory proposed will be pointed out by those who adhere to other theories, but he hopes the hypothesis suggested may lead those engaged in endocrinological research to undertake experimental work that will either strengthen or nullify the theory. It is possible such research might eliminate the need for using such heroic measures as electrically produced coma, by supplying us with chemical substances (hormones?) that could be simply administered and yet accomplish the same results in melancholia and schizophrenia.

CONCLUSIONS

1. The rationale for using electroshock therapy is established on a solid, uncontradictable footing today, attested to by published reports, and now supplementary informal reports of many hundreds of psychiatrists who have treated many thousands of cases and are convinced that it is one of our most valuable therapeutic measures in psychiatry.

2. Outpatient ambulatory electrotonic therapy, carried out either in the office or hospital with proper safeguards by adequately trained psychiatrists, is to be encouraged.

3. Since the avoidance of every possible element of stigma to the mentally disordered person is exceedingly important, in the social and especially the economic rehabilitation of the patient, every possible means of preventing institutionalization should be resorted to which means the administering of shock therapy on an ambulatory basis whenever practicable.

4. Since there is evidence of material reduction in the suicide rate, a considerable part of this reduction being attributable to electroshock, it follows that electroshock therapy should be given to all suicidal cases unless physical contraindications preclude this.

5. Potentially suicidal melancholy patients should be administered electrotonic therapy immediately, analogous to life-saving emergency surgery.

6. The gist of this conclusion as formulated in the original paper read in Montreal, May 25, 1949, was embodied in the news release issued 24 hours later, a joint statement by Dr. William Menninger, President of The American Psychiatric Association, and Dr. Nathan K. Rickles, President of the Electroshock Research Association. I quote:

> Electroshock therapy is accepted today as the most effective physical agent in the successful treatment of the majority of the affective psychoses when given by properly qualified psychiatrists.
>
> It should be stressed that at no time is electroshock advanced as a cure-all, but only as one very effective agent in selected classes of mental illness. It should always be preceded by a complete and thorough psychiatric study of the patient, which includes an evaluation of his mental and physical status, his family and his environment, and should also be followed with adequate psychosocial study and psychotherapeutic guidance.

7. Since they have already proved invaluable in fostering psychotherapy in cases formerly considered inaccessible, research should be fostered in physiological methods in psychiatry—that is, psychosurgery, biochemistry, endocrinology, vitaminology, the various shock therapies, etc.

8. Attainment of understanding of the dynamisms involved in a given case is not enough. We must have a higher therapeutic goal, namely rehabilitation.

9. Controversies between doctors, from any specialty, concerning therapies in the stage of evolution should not appear in the public press, but should be debated at professional gatherings or in professional journals *only*.

10. Ethical dicta on this point are lacking in our psychiatric by-laws. The whole matter should be clarified and specific policies

formulated for the guidance of *all* psychiatrists.

11. The indiscriminate therapist must be controlled by corrective measures directed at him specifically, and not by nation-wide publicity of ostensibly authoritative, critical statements, which by implication appear to condemn a *treatment method* known to be efficacious and widely used, rather than those who administer the treatment unscrupulously.

12. Our primary aim as physicians is to help the sick attain health, and American psychiatrists endorse in proportion of 4 to 1 the use of electroshock therapy in properly selected cases, as one means for accomplishing this end. *Shock therapy is no longer on trial!*

DISCUSSION

Dr. A. Z. Barhash (New York City).—I think it is my job here today not to air all my views on electroshock therapy, but only to present my reactions to the contents, the merits, and the implications of the paper you have just heard. I approach this task neither as a proponent, and most certainly not as an opponent, of shock therapy. My interest is that of a physician considering a procedure that affects the welfare of his patients. As a staff member of the National Committee for Mental Hygiene, I have a further special interest in the public-health implications that are claimed by the author for this form of treatment.

Let us begin with the title of Dr. Robie's paper, since it is provocatively stated in question form, and therefore demanding of an answer: "Is Shock Therapy on Trial?" To me it seems perfectly obvious that it is, and that it very properly should be. To my knowledge, there is no therapeutic procedure in all of medicine that is not on trial. An attempt to set off any treatment as sacrosanct—as immune from question, trial, and investigation—runs counter to the spirit and the tradition of medical practice.

As to the data on suicide rates offered by Dr. Robie as proof of the effectiveness of electroshock therapy, these constitute the most ridiculous effort I have ever seen at pulling a mythical rabbit out of a statistical hat. For it is only someone intent upon such magic who can so naively offer the 1930s as "corresponding roughly to the pre-electroshock era." It is true that during this decade the world had not yet benefited from the wholesale blessings of electroshock therapy, but isn't it just possible that the great depression had something to do with the higher suicide rates, and the great war with the lower ones that followed? For instance, back in 1900 the suicide rate was 10.2 per 100,000 population. In the intervening years it went up to 16.8 following the depression of 1907, and dropped sharply during and following the first World War back to 10.2 in 1920. Dr. Robie knows these figures, for they come from the same source used by him. The conclusion is inescapable that he overlooked the parallel because it destroyed his argument. And all in the name of making psychiatry more scientific! Statisticians, at least, will hardly believe that this abuse of their discipline makes scientists of us.

Beyond a few brief remarks, I shall leave it to those who have had research experience in the physiology of electroshock to comment on Dr. Robie's theory that the therapeutic effect results from pituitary stimulation. It is a little hard to understand how Dr. Robie, as a psychiatrist, can so completely overlook the role of psychic factors in the lifting of depression, the relief of headaches, and the restoration of potency. And even if he chooses to be rigidly mechanistic, he should give some little thought to the many structures of the nervous system that are affected by the current, rather than indulging in wistful daydreams about new hormones produced by electricity. I should like to know why there is no proof of sella erosion in depressed states if the pituitary shows pressure variations, as postulated by Dr. Robie. Also, why the comparison of insulin therapy in diabetes, which *rests* the injured pancreas, with electroshock, which doesn't rest the pituitary but supposedly *stimulates* it to greater activity?

Let us turn now to the surveys made by Dr. Robie. In effect the replies show overwhelming approval of electroshock therapy in *properly selected cases.* But we know that most of the attacks on electroshock therapy are based precisely upon the fact that too often proper selection is not exercised, so that the treatment gets to be used indiscriminately. Yet the author says nothing about the criteria for selection, and offers no refutation of the charges of indiscriminate use.

I am aware, of course, that Dr. Robie recommends ". . . . the use of physiological methods adjunctive to psychotherapy." These are very proper sentiments, but they don't protect our patients from what is actually happening. From all over the country we get almost daily information about the indiscriminate use of shock therapy, not as an adjunct, but as the *only* approach to treatment. Very often there is no preceding diagnosis, no psychiatric examination, no physical examination, no formulation of the patient's personality or his needs, no evaluation of the social situation, and no consideration of the physical and psychological risks involved. I submit that such practices, which are reported in numbers and from sources that leave no doubt as to their widespread existence, are neither physiological, nor scientific, nor medical, nor human, nor, for that matter, honest. If we, as a body of physicians, cannot face the fact that a form of treatment, though we may approve of it, is being sadly misused, then it behooves us to halt for an examination of our own motives. We should at least ask ourselves whether it is true, as is often charged, that electroshock therapy is too profitable

to be questioned or tampered with. Others have been more courageous than we. No one doubts that an appendectomy is a useful procedure in properly selected cases, but that did not prevent surgeons from decrying the abuse of the operation at a time when such abuse was more common than it is today.

Dr. Robie believes that electroshock therapy on an ambulatory basis should be encouraged if used by competent, adequately trained psychiatrists. All of us would agree that it should not be used by nonpsychiatrists, but that agreement is based on the supposition that psychiatrists exercise medical judgment in the use of this treatment such as is hardly available to physicians, and not at all to nonphysicians. But if electroshock therapy continues to be used indiscriminately, if the prescription becomes automatic instead of depending on medical judgment, if it becomes the solitary choice of treatment, then it might as well be given in massage salons and barber shops.

In summary, let me remind you that what I criticize is not electroshock as a form of treatment, but its abuses in current practice, which are protected by Dr. Robie's uncritical defense. I believe that we should turn constantly to the basic disciplines that lend scientific support to our medical endeavors, but let us not forget that psychology is one of those basic disciplines, not only for psychiatry but for all of medicine. In the name of making psychiatry more "scientific," Dr. Robie abandons psychology to grasp at statistical and physiological straws.

DR. ROBIE (concluding remarks).—Each reader must draw on his own experience to decide the merits of this paper.

It was gratifying indeed that the many other discussants did not assume the denouncing attitude assumed by Dr. Barhash for reasons best known to himself.

I wish to thank those who were kind enough to commend the paper and I also thank Dr. Barhash for his comments. It was Walter Lippman who coined the truism: "When everyone thinks alike, no one thinks much of any."

Since the critic leans upon the prestige of the National Committee for Mental Hygiene to bolster the authoritarianism of his pronouncements, one wonders why so many laudatory remarks concerning electroshock therapy are found throughout the very fine pamphlet entitled "Psychiatric Shock Therapy" published under the ægis of the National Committee for Mental Hygiene.

I close with a reiteration of a thought voiced in the paper: Electroshock therapy is the best treatment known today for suicidal depressive states; in fact, it is a near specific. Therefore it should be administered without delay to any case of mental disorder wherein the psychiatrist believes suicide is imminent.

THE ANTICIPATION AND PREVENTION OF CARDIAC COMPLICATIONS IN ELECTROCONVULSIVE THERAPY

A Clinical and Electrocardiographic Study [1]

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Introduction

Reported deaths immediately following electroconvulsive therapy(1-3) have been attributed to cardiac or respiratory(4) failure, but clinical and autopsy findings have usually failed to establish a definite cause of death. Our observations in 2 deaths(6) occurring immediately after electrically induced convulsions and the observation of several strikingly similar, nonfatal postconvulsive reactions prompted this electrocardiographic and clinical study.

Methods and Materials

Following a careful physical examination and an electrocardiogram, patients were routinely curarized and treated with the conventional model shock therapy equipment manufactured by Lektra Laboratories, New York. The limb electrodes of a direct writing Viso-Cardiette were placed and a preliminary 3-lead tracing taken before the stimulus, and a continuous tracing recorded during (where possible) and after the convulsion alternating the 3 standard limb leads. Clinical observation as to curare dose and effect, electrical stimulus, duration and type of convulsion, color, respirations, and muscle tone was recorded.

Reaction Types

After a rather detailed analysis of an original series of 304 treatment studies in 127 patients(7), it became apparent that the unfavorable posttreatment cardiac reactions fell into 2 general groups: those resulting from overactivity of the vagus(8) and those resulting in ectopic mechanism disturbances from other causes.

Vagal reactions were characterized by bradycardia and occurred immediately after, or within a few seconds after, the convulsion and persisted for varying lengths of time up to 4 or 5 minutes. There is suppression of the normal sino-auricular pacemaker with slowing to the point where ectopic pacemakers lower in the atrium, in the junctional tissues, in the atrioventricular node, or even in the ventricle, may be "forced" to initiate the cardiac cycle. The pulse frequently is very irregular as well as slow owing to apparent variations in excitability of the ectopic pacemakers under the influence of "vagal suppression." Other systemic manifestations of autonomic commotion, with vagal predominance, such as peripheral vascular collapse with ashen shocklike pallor, muscular relaxation, prolonged apnea, excessive salivary and bronchial secretion, and posttreatment nausea and vomiting were frequently associated with vagal cardiac reactions. Profound reactions of this type have closely resembled the clinical picture seen in 2 fatal reactions observed here. Several clinically alarming reactions of this type were observed in this series. The most severe one (Fig. 1) was associated with cardiac standstill for 5.2 seconds, preceded and followed by a very irregular nodal rhythm at a rate of about 40 per minute. This patient was pallid and apneic for about one minute and was given artificial respiration with 100% oxygen inhalation for an additional 2 minutes before spontaneous respiratory efforts were made. The cardiac rate and

[1] Read at the 105th annual meeting of The American Psychiatric Association, Montreal, Quebec, May 23-27, 1949.

From the University of Texas, Medical Branch.

Prepared with the assistance and advice of Drs. George R. Herrmann and Milton R. Hejtmancik of the Department of Internal Medicine.

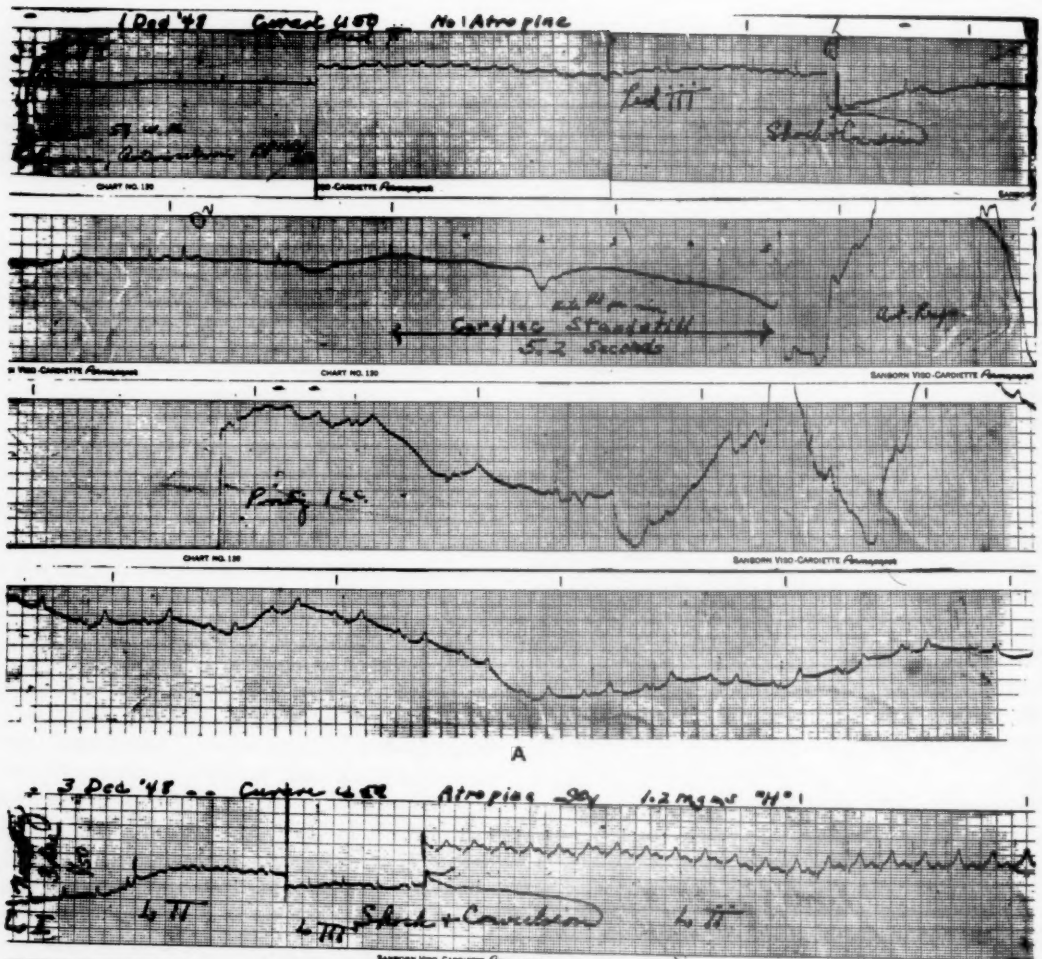

FIG. 1.

A. Electrocardiogram before and after electroshock treatment in 58-year-old white male arteriosclerotic with intense postconvulsive vagal reaction showing nodal pacemaker with cardiac standstill for 5.2 seconds followed by recovery.

B. Similar study 2 days later in same individual using atropine SO_4 gr. 1/50 I.M. 20 minutes before convulsion followed by no significant change in cardiac rate or mechanism.

mechanism had returned to normal within one minute and the electrocardiograph had resumed its pretreatment form.

These vagal reactions were recognized in 30% of the patients in this series and were alarming in 4%. If not modified by pretreatment medications, the reaction most consistently repeats itself in subsequent treatments, 7 such reactions having been observed and studied in one individual. Undoubtedly, reflexes(9, 10) initiated by the apnea, muscular exertion, changes in intrathoracic pressure and venous engorgement incident to the convulsion, and the rather abrupt changes in these functions following the convulsion with dilatation of the right heart, play an important rôle in producing the reactions. There is evidence that centrally arising impulses incident to cerebral circulatory changes, cerebral anoxia, and the electrical stimulus itself may play a rôle. In any event it is apparent that the undesirable manifestations are brought about through the vagus and other parasympathetic outlets. The uniformly favorable alterations in these reaction patterns following atropinization lend strong support to this theory.

Other cardiac abnormalities that were generally not associated with alarming clinical reactions consisted of ectopic contractions of atrial and ventricular origin occurring singularly, in regular recurring patterns (bigeminy and trigeminy), or in sequence (atrial and ventricular tachycardias). These reactions were considered hazardous because it was felt that they were precursors of a fatal cardiac mechanism disturbance, such as ventricular fibrillation. These reactions were seen during the deepest postconvulsive cyanosis and were observed more frequently and were more severe in patients with heart disease, especially those with coronary artery diseases. Foci of irritability in the myocardium, myocardial ischemia and anoxia, changes in blood and tissue electrolytes(11, 12), and changes in venous return and cardiac output incident to the convulsion have been held accountable for the reactions. Ectopic reactions of serious proportions, excluding isolated or infrequent scattered atrial or ventricular prematures, occurred in 23 patients in this series. Transient runs of ventricular tachycardia were considered the most potentially serious of those observed (Fig. 3).

The prediction of either of these reactions from a preliminary study was impossible; however, it was found that the reactions of both types were much more severe in patients with organic heart disease and in the older age groups. Vagal reactions were seen to occur frequently, but not invariably, in patients with a prolonged P-R interval in the preliminary electrocardiogram and in those patients showing a relative bradycardia. The cardiac as well as clinical response tended to be uniform in the same individual if not modified by pre- and posttreatment medication.

Thirty patients in this series had definite clinical and electrocardiographic evidence of heart disease and their reactions are tabulated in Table 1. In general the reactions were more severe and prolonged but did not differ in character from those observed in other subjects.

Therapeutic Measures

In considering premedication treatments, it was felt that owing to the extremely low mortality of electroshock therapy any measures undertaken must be free of hazard. Pretreatment atropinization had been suggested(10) and used(13) in selected cases with good results and no apparent ill effects. An additional series of (478) clinical and ECG studies of 166 unselected cases with and without atropine premedication has been carried out. The results of the control studies with premedication are summarized in Table 2. All these patients were given atropine grs. 1/50 (1.2 mgms.) intramuscularly 20 minutes before treatment. This eradicated the vagal posttreatment reactions in all but 7 of the cases, of which 5 needed atropine grs. 1/30 (2 mgms.) intramuscularly and 2 needed atropine grs. 1/50 intravenously 10 minutes before the treatment to produce the symptoms of adequate atropinization (tachycardia over 120, pupilary dilatation, and dryness of oral secretions) and to prevent the posttreatment vagal reaction (Table 3). With adequate atropinization, the shocklike pallor was not noted. Posttreatment nausea and vomiting were eradicated in the 6 instances observed

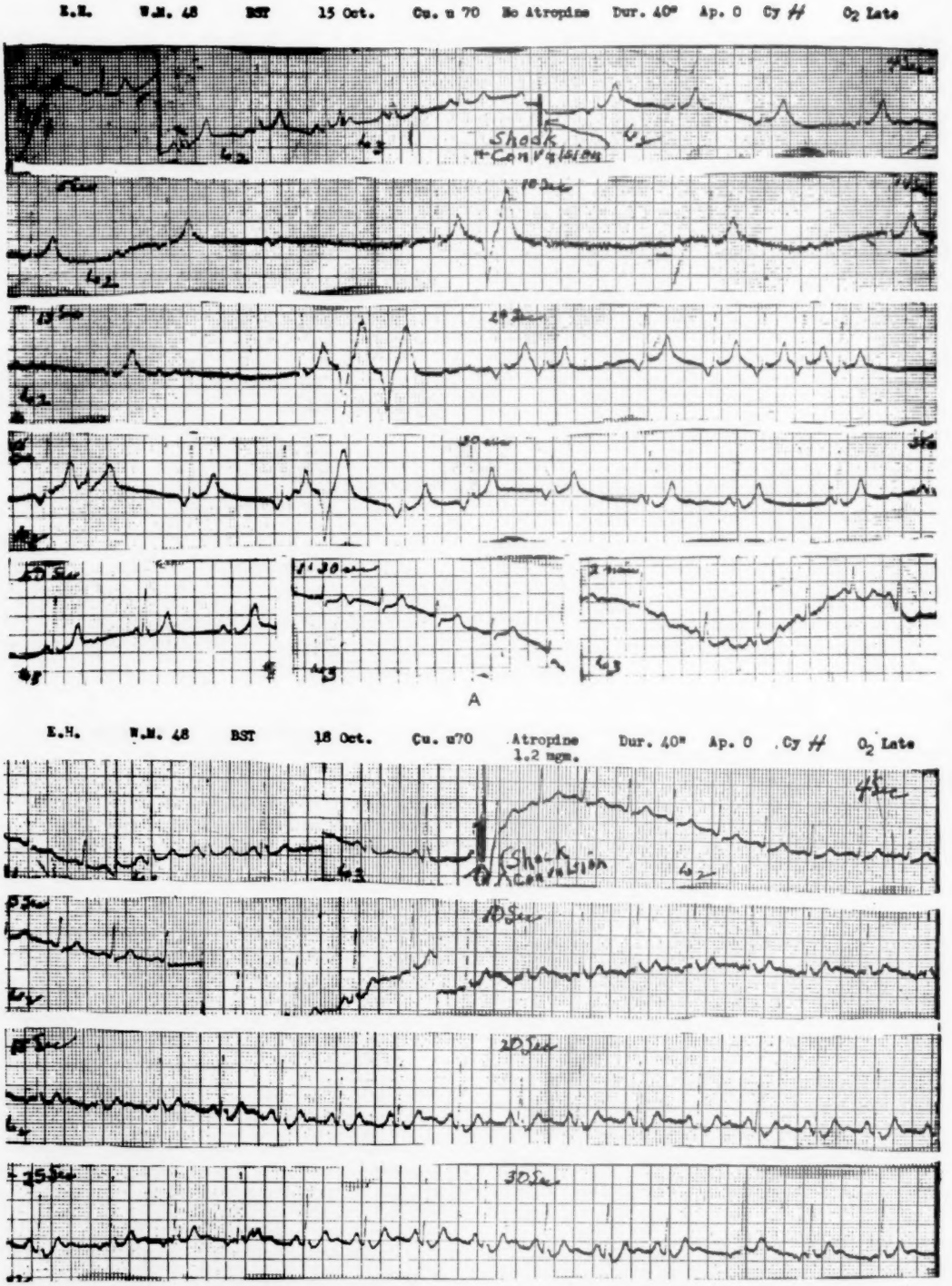
E.H. W.M. 48 BST 15 Oct. Cu. u 70 No Atropine Dur. 40" Ap. 0 Cy // O2 Late
Shock + Convulsion
A
E.H. W.M. 48 BST 18 Oct. Cu. u70 Atropine 1.2 mgm. Dur. 40" Ap. 0 Cy // O2 Late
Shock + Convulsion
B

FIG. 2.

A. Typical vagal posttreatment bradycardia with aberrant pacemaker, dissociation of auricular and ventricular contractions, and ventricular ectopics occurring during recovery phase.

B. Same patient 2 days later treated using atropine (gr. 1/50) premedication.

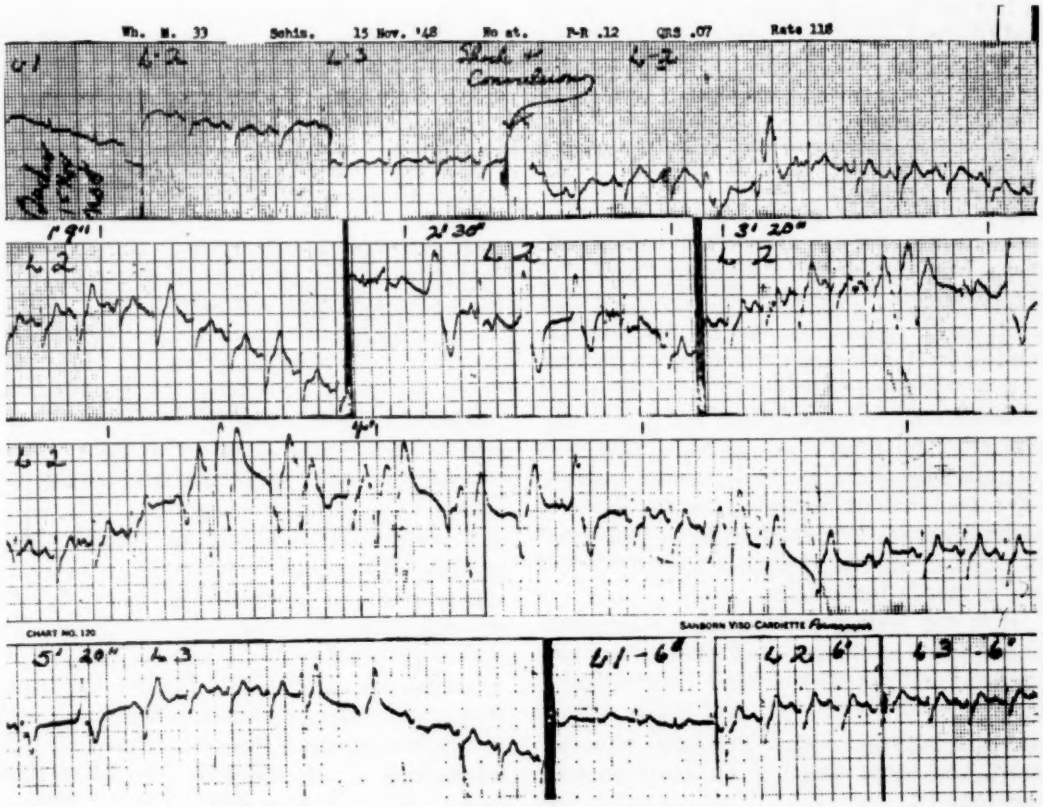

FIG. 3.

Excerpts from a pre- and posttreatment cardiogram in 33-year-old schizophrenic with minor electrocardiographic changes showing severe ventricular ectopic reaction beginning 1 minute after convulsion and progressing to transient ventricular flutter at 4 minutes, followed by recovery.

TABLE 1

REACTION OF PATIENTS WITH ORGANIC HEART DISEASE

	No.	ECG Reactions			
		Normal	Vagal	Ectopic	Both (V and E)
Hypertensive	9	1	6	4	2
Arteriosclerotic	8	6	1	2	1
Coronary artery disease	8	0	5	5	2
C.A.D. with bundle branch block	5	2	1	2	0
Total	30	9	12	13	5

TABLE 2

ECG RESPONSE IN CONTROL STUDIES

	No.	%
Normal	102	61
Vagal	50	30
Ectopic	23	15
Both (V and E)	11	7
Total	166	100

TABLE 3

EFFECT OF ATROPINE PREMEDICATION ON VAGAL REACTIONS

Reaction		Relieved 1/50 I.M.	Relieved 1/30 I.M.	Relieved 1/50 I.V.
Mild	30	30	—	—
Moderate	14	12	2	—
Severe	6	1	3	2
Total	50	43	5	2

in this series. Suppression of the pharyngeal and tracheal secretions apparently facilitated respirations and posttreatment apnea was reduced. No untoward cardiac reactions to atropine were observed clinically or electrocardiographically. Occasional subjective complaints of dryness of the mouth, anxiety, and palpitation were noted before treatment but did not persist after recovery. Glaucoma was considered a contraindication to atropinization; however, 2 depressed patients with glaucoma having had iridectomies, given atropine premedication because of a severe vagal reaction, showed no change in intra-ocular tension before and after atropinization on several occasions. There was no noticeable alteration in the effect of curare (D-tubocurarine) in these patients. The use of barbiturates or paraldehyde pretreatment sedation in several instances apparently did not influence the results.

It is our feeling that atropine premedication is free of hazard and should be used in those patients with organic heart disease, those over 45 years of age, those having shown a previous "vagal reaction" to treatment, and those showing ECG evidence of vagatonia(7).

Following the original electrocardiographic studies atropinization has been carried out in over 2,500 treatments in over 450 patients with uniformly good results. We have noted occasionally a posttreatment elevation of temperature in the range 99-100° F. and this elevation seems to occur more frequently in atropinized patients, but has caused no discomfort and has not been considered harmful.

Since ectopic phenomena occurred almost uniformly during the deepest cyanosis following a convulsion(14), adequate oxygenation seemed to be the most important measure in preventing this type of reaction. The early administration of 100% oxygen by inhalation strikingly modified these reactions in every case. Atropinization was helpful in preventing posttreatment cyanosis and accompanying ectopic reactions, the latter being eradicated by atropine premedication in 12 of the 23 instances. The use of mechanical airways and artificial respiratory movements was resorted to if respirations were delayed. In cases showing ectopics, especially those of ventricular origin in the preliminary electrocardiogram or severe ectopic phenomena in the control treatment study, quinidine SO_4 in a dose of 3 grs. 4 times daily was given during the treatment period with a substantial reduction in severity and duration of ectopic reactions.

All these patients were curarized. The effect of curare could not be evaluated, but it is our feeling as recently reported(14) that curarization, by reducing the severity of the convulsion and concurrent rise in intrathoracic and venous pressure, minimizes the postconvulsive cardiac dilatation, resulting from the rapid inpouring of peripherally pooled blood; thus exerting a favorable effect upon the heart. No arrhythmia or unfavorable cardiac reactions attributable to curare were noted in this series.

Posttreatment cyanosis and ectopic phenomena were more pronounced in instances where multiple stimuli were given before a convulsive response was obtained. In order to avoid this added hazard(15) it is preferable to give a stimulus calculated to give a prompt convulsive response, and to allow adequate time and to give oxygen inhalations if necessary to reestablish adequate oxygenation and circulation before a subsequent stimulation.

Summary

In order to overcome the multiple insults to cardio-respiratory equilibrium incident to the convulsion, therapeutic measures should be directed to early oxygenation of the alveoli and the maintenance of central and peripheral circulator mechanisms to deliver oxygenated blood to the myocardial, cerebral, and other tissues. Since circulatory function and respiration are interdependent, changes in one function are rapidly reflected in the other, and failure of one inevitably leads to failure of the other. Therapeutic measures to support the failing circulation are best done, before the critical postconvulsive state exists, in the form of atropinization to prevent vagal effects and other supportive measures, such as administration of digitalis, quinidine, aminophylline, and other medications before treatment is begun(7, 16). Respiratory failure is more easily dealt with at the time of occurrence, and the early institution of oxygen inhalations with the aid of artificial

respiration and mechanical air way is far more beneficial than heroic measures later.

Utilizing these principles, patients with serious cardiac disease can be safely and confidently given the benefits of electroshock therapy. Four patients having suffered acute coronary thrombosis prior to treatment have been successfully treated, and 3 patients having suffered episodes of congestive failure and taking digitalis during the course of treatment were treated uneventfully.

Conclusions

1. It seems likely that "functional" deaths immediately following electroconvulsive therapy are brought about by vagal mechanisms described.

2. Atropine is a safe premedication and consistently prevents vagal postconvulsive cardiac irregularities.

3. The effective administration of oxygen after the convulsion is important in preventing other unfavorable cardiac reactions.

4. The judicious use of digitalis, quinidine, aminophylline, and other supportive medications during treatment period is of value in patients with heart disease.

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INSULIN SHOCK THERAPY, A STATISTICAL SURVEY OF 393 CASES

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Introduction

Insulin shock is now in its second decade as a treatment of certain psychoses, especially schizophrenia. It has had an extensive clinical trial with many modifications and refinements, and there have been divergent opinions regarding its value. In recent years Kalinowsky and Hoch, Tennent, Bennett and Engel, Wilcox, and Bellak made extensive reviews of the literature.

Insulin shock therapy has been used extensively at the Chillicothe (Ohio) Veterans Administration Hospital, and 393 patients had received one or more courses by December 1, 1947. This series of cases appears to be one of the largest treated under standardized conditions at any one hospital yet reported in the literature. Therefore, the authors have endeavored to assemble all the information available on this group of patients with the hope of contributing to the solution of some of the controversial problems. This material has been evaluated by statistical methods through the courtesy and assistance of the Department of Mathematics of Ohio State University, Columbus, Ohio.

Review of the Literature

There is wide variation of opinion with respect to the efficiency of insulin shock therapy. Kalinowsky and Hoch state that the long-range picture in insulin-treated schizophrenics is far from satisfactory, but they feel that this statement should not be used as an argument against insulin therapy. However, Ross in a review of 1,356 cases found that, considering all degrees of improvement, patients receiving insulin shock exceeded a control group by 173%. Bond and his associates have written a series of papers emphasizing the value of this therapy, while Danzinger and Kindwall in a statistical analysis state that there can be no doubt that insulin shock produces a much greater recovery rate than does symptomatic treatment. On the other hand, Libertson raised considerable doubt as to its value, and Nielsen and his associates found that a group of control patients had a higher parole rate than insulin-treated cases. Another questionable point was raised by Salzman who believes that insulin-shock-treated patients have a higher readmission rate because of deterioration and personality changes as a result of the therapy.

The question of possible racial differences in response to insulin shock has been almost completely neglected in the literature. Barker, from a study of 33 Negro cases, gained the impression that functional psychoses in that race showed an increased modifiability by insulin shock therapy. However, he stressed the hazards of this treatment in Negroes because of the early onset of cardiovascular disease in that race.

The age of the patient at the time he receives treatment was not considered to be a significant factor by such authors as Malzberg, Gralnick, and Hinko and Lipschutz. Nevertheless, Bateman and Michael found that patients between 20 and 24 years of age were more likely to benefit as a result of treatment, while Cheney and Clow stated that patients under 30 have the best prognosis.

Goldfarb and his associates were of the opinion that there is no significant difference in recovery rates in various types of schizophrenia treated by insulin shock therapy.

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The opinions expressed herein are those of the authors and do not necessarily reflect the viewpoints or policies of the Veterans Administration.

However, there are other references in the literature that stress the point that either catatonic or paranoid types profit more from this form of treatment. In 1942 Kolb and Vogel, in a survey of 305 hospitals, found a consensus that catatonics responded more favorably than paranoids, and the latter in turn more favorably than hebephrenics. Bond and Shurley stated that it is preferable to treat patients with overt or concealed paranoid trends of relatively short duration.

There is almost universal agreement that there is an inverse ratio between recovery and length of psychosis. Kalinowsky and Hoch consider duration of illness prior to treatment as the most important factor in prognosis. Nonetheless, some chronic cases have been benefited according to Bond and Shurley and also Gralnick.

Data from the literature concerning remission and recovery rates present such wide variations that they can be summarized best in Tables 1 and 2. The discrepancy in the figures apparently depends not only on the variations in case material and treatment procedures but also on the interpretation and evaluation of the clinical results. Therefore, it is necessary to list the results from the literature in two separate tables; first, according to the classification proposed by Ross (see Table 1) and secondly, according to the final disposition of the patient, *i. e.*, whether he is discharged or remains hospitalized (see Table 2). Some authors have treated their case material in a manner that definitely places it in either one or both of these tabulations. Others have presented their findings in such a way that the results cannot be properly classified by either of these two tabulations, and their findings are therefore excluded from this discussion.

The reported percentages of cases that show relapse in various series have also differed, and various definitions of a relapse status were encountered in the literature. Table 3 gives the relapse rates reported by various authors after a period up to 7 years following treatment. Relapse was synonymous with rehospitalization in those groups of cases.

In view of the fact that insulin shock therapy is both more time consuming and expensive than electroshock therapy, there has been a tendency to treat many cases with electroshock first, and to use insulin shock only if the electroshock therapy did not yield sufficient clinical improvement. Therefore, the recovery rate in comparative series of

TABLE 1

RECOVERY AND IMPROVEMENT RATES

Reference	Number of patients	% recovered	% much improved	% improved	% unimproved
Ross (1939)	1,356	14.2	20.6	26.3	38.9
Barker (1943)	33	3.0	33.0	21.5	44.5
Bateman and Michael (1940)	416	31.2	12.9	27.8	27.6
Libertson (1941)	165	2.4	31.0	29.0	36.9
Malzberg (1938)	1,039	12.9	27.1	25.3	33.4
McKendree (1938)	87	29.8	22.8	22.8	23.9

TABLE 2

DISPOSITION OF PATIENTS

Reference	Number of patients	% discharged	% still hospitalized
Bond and Rivers (1944)	251	54.0	46.0
Danzinger and Kindwall (1946)	145	45.0	55.0
Gralnick (1946)	158	52.5	47.5
Malzberg (1938)	1,039	49.0	51.0
McKendree (1938)	87	55.0	45.0
Nielsen et al. (1942)	151	38.0	62.0

TABLE 3

RELAPSE RATES

Reference	% Relapse	Time
Bond and Rivers (1944)	21	Up to 7 years
Gralnick (1945)	19.3	Up to 2 years
Malzberg (1938)	24.5	Up to 1 year
McKendree (1938)	16	1½ to 4 years

electroshock and insulin shock cases is very likely to be distorted unless a separation is made of the insulin shock cases in terms of insulin being the first form of shock therapy used. Statistical studies on those cases in which electroshock followed the use of insulin shock, or vice versa, are difficult to find in the literature. Gralnick stated that it is worth while to resort to electroshock therapy in catatonics and paranoids who have been ill less than one year and have failed to respond to insulin shock therapy. In those cases he found a remission rate of 20%. No patient whose duration of illness was over one year responded to further electroshock therapy.

It is a general observation that a gain in weight during insulin shock therapy is almost universal, but there has been some question as to whether weight gain contributes to recovery. Bennett states that where good sustained results were obtained there usually occurred a marked weight gain.

Various opinions have been expressed as to the importance of the intensity or length of the treatments. Gralnick stated that the results bear no relationship to the number of treatments or the number of comas. Danzinger and Landhal made no distinction between long or short, deep or shallow comas. However, Bond and Rivers stated that with low dosages and mild procedures the recovery rate after 2 years was only 30% as compared to a recovery rate of 46% when the patients were subjected to deep stupors and high dosages. Most reports agree that patients who show the best response do so early in the course of the therapy. There are other papers that state that patients who relapse often show improvement with a second course of treatment. Veit believed that spontaneous epileptic convulsions have no therapeutic significance whereas other workers have thought that convulsive attacks are followed by immediate and relatively marked improvement. Stell found that when convulsions are induced in the course of insulin therapy the necessary dosage to produce shock for the subsequent treatment is reduced.

Bond and Shurly had a mortality incidence of 4 deaths in 400 treated cases. Kolb and Vogel reported a very low mortality rate of 6 deaths per 1,000 cases. Bond and Rivers had 7 deaths in 188 cases.

Material and Methods

This series consisted of 393 male veterans of whom 342 were whites and 51 were Negroes. Their ages ranged from 18 to 55 years, with a mean of 29.2 years.

Of the 393 patients 367 were given some variety of schizophrenic diagnosis, based upon a clinical picture of withdrawal, autism, regression, and usually on the appearance of hallucinations and delusions. The subtypes of schizophrenia were diagnosed on the basis of the preponderant findings in the clinical picture and were determined by complete clinical examinations and by staff conferences. An attempt was made to exclude acute "schizophrenia-like" psychoses.

In addition to the schizophrenics there were 16 manic-depressives, 4 with psychosis and mental deficiency, 3 with psychosis due to alcohol, 2 with involutional psychosis, and 1 was diagnosed as psychopathic personality.

The three largest groupings with a diagnosis of schizophrenia were 135 hebephrenic reaction types, 106 paranoid reaction types, and 87 catatonic reaction types.

The method of administering insulin shock was adopted with some modifications from the original treatise by Sakel. Regular crystallin insulin was administered intramuscularly in the gluteal region Monday through Friday at 7:00 A.M. after temperature, pulse rate, and blood pressure had been recorded on each patient. The patient was then confined to his bed with a camisole restraint and was observed for the initial sign of hypoglycemia, which was usually excessive perspiration. The time of onset of this symptom was recorded as the beginning of the shock period. The duration of the first 6 shock periods was limited to 30 minutes; the following 6 shock periods were terminated after 60 minutes; the remaining treatments were of 90 minutes' duration, unless the condition of the patient necessitated earlier intervention. A total of 50 comas ordinarily constituted a course at this hospital and this required 2½ to 3 months for completion. The patient was given an initial dose of 10 to 20 units on the first day of treatment; this was increased 10 to 30 units per day depending

upon the time of onset of the shock period. If the patient showed symptoms of hypoglycemia within 2 hours after the injection of insulin, the same dosage was maintained the following day. If the symptoms occurred later than this, it was termed "late" shock and the dosage was increased by 10 units for each one-half hour period that the onset of hypoglycemia was delayed.

In preparing this report an attempt was made to handle the data in a uniform manner. The material from each patient's hospital record was abstracted and transcribed to a data card. Each data card was then coded and transferred to a separate International Business Machine card. These cards were mechanically sorted in terms of possible correlations and computations were made for the purpose of statistical analysis. Three types of mathematical procedure were used on these data.

1. Relationships were obtained between 2 methods of discrete classifications; for example, the disposition of the patient and the diagnosis. This sort of data yields a contingency table, and χ^2 (chi square) tests were used to determine whether there was or was not a relation between the classifications.

2. Comparisons were made of 2 groups by means of some measurement. To decide whether the mean of one group was significantly greater than the mean of the other group, "t" tests were used.

3. Relations were investigated between pairs of continuous measurements. For example, we may question whether the weight gain per day is associated with the fasting blood sugar. In these cases the correlation coefficient was used as a measure of the relationship between the variables.

Data and Discussion

Effectiveness of Insulin Shock Therapy.— The efficiency of insulin shock therapy in this series was determined primarily by the issue whether the patient was discharged or remained hospitalized. Consideration was also given to the incidence of relapses in those patients who had been discharged and to the type of adjustment of the discharges (see Table 4).

In Table 4 only the 367 schizophrenic cases are analyzed. The results for the entire series of 393 cases are, however, almost identical. In this table "relapse" refers to return to a psychiatric hospital (except in one case where it denotes suicide).

A follow-up study was conducted in order to ascertain the social and industrial status of the discharges some 21 to 75 months (average 40 months) after their treatments. The former patients were rated as well adjusted (indicating good social and economic adjustment), marginally adjusted (patients who are working part-time and making social adjustment but who are exhibiting some psychotic symptoms not severe enough to require hospitalization), or poorly adjusted (showing marked psychotic symptoms, not working, and proper subjects for hospitalization but for the fact that the family is able to care for them). In making a survey of the 62 schizophrenics who have remained discharged from the total of 367, adequate follow-up reports have been received on 48 patients. Of these, only 13 are making a good adjustment, 19 are making a marginal adjustment, and 16 are poorly adjusted. Using this same survey and applying the results to the group of 182 schizophrenics who were first treated with insulin, 27 of the 36 cases reported; and only 8 are well adjusted,

TABLE 4

Discharge, Relapse, and Recovery Rates in Schizophrenic Cases Only

Number of patients	Discharges: Number	Discharges: %	Relapse number	% of those discharged	Remain discharged % of original
Entire series (367 patients)	95	25.9	33	34.7	16.9
Without prior electroshock therapy (182 patients)	62	34.1	26	41.9	19.8
With prior electroshock therapy (185 patients)	33	17.8	7	21.2	14.1

11 are marginally adjusted, and 8 are poorly adjusted.

In summary, our figures show that while insulin shock therapy may be of some benefit in schizophrenia its effectiveness is not marked. While 34.1% of the patients treated with insulin shock therapy as the first form of treatment were discharged, only 19.8% remained discharged at the time of this evaluation, and less than one-third of these appear to be well adjusted. This brings the social recovery rate down to between 6% and 7% (estimate). This figure must be considered as low in the light of Cheney and Drewry's finding of 12% for a recovery rate in a follow-up study of the nonspecific treatment of dementia præcox. It suggests the possibility that the insulin therapy may have retarded or prevented recovery. However, it is to be understood that we have absolutely no proof to support this possibility.

Race.—The data showed that there was no correlation between the race of the patient and any one of the following items: diagnosis in terms of types of schizophrenic reaction, effectiveness of insulin shock therapy, the apparent degree of clinical improvement immediately following therapy, and the occurrence of cardiovascular complications. This does not substantiate the previously mentioned findings of Barker.

Age.—There was no significant statistical correlation between the age of the patient and recovery sufficient to warrant discharge from the hospital following treatment, as is shown in Table 5.

An interesting correlation was found between age and the occurrence of relapse in patients discharged from the hospital following therapy (see Table 5). The incidence of relapses definitely decreased with age in patients over 21. In the total series it was found that the patients who suffered relapses after discharge from the hospital averaged 4 years younger than either those remaining discharged or the patients still hospitalized.

An analysis of the changes in systolic and diastolic blood pressures during insulin shock therapy failed to show a significant variation in terms of the ages of the patients.

Studies of the number of shocks, the total hours of shock, the fasting blood sugar and the minimum and maximum dose of insulin used failed to show any correlation with the age of the individual patient.

TABLE 5

AGE VS. DISPOSITION

Age	Number of patients	Discharges		Relapses		Remain discharged % of original no.
		Number	%	Number	%	
Entire series (393 patients):						
15-20	11	4	36.4	1	25.0	27.3
21-25	102	25	24.5	13	52.0	11.8
26-30	150	39	26.0	16	41.0	15.3
30+	130	31	23.8	4	12.9	20.8
Without prior electroshock (193 patients):						
15-20	7	4	57.1	1	25.0	42.9
21-25	55	17	30.9	11	64.7	10.9
26-30	64	22	34.4	11	50.0	17.2
30+	67	22	32.8	4	18.2	26.9

A study was made to determine if there was any correlation between the age of the patient and the clinical classification in terms of the type of schizophrenic reaction shown. It was noted that patients classified as schizophrenic reaction, paranoid type, were appreciably older than those classed as catatonic and hebephrenic varieties of schizophrenia. The paranoid type appears to have later onset; it may be that society tolerates such people for longer periods.

Schizophrenic Diagnoses.—No significant correlation was found between the effectiveness of insulin shock therapy and the diagnosis in terms of paranoid, catatonic, or hebephrenic types of schizophrenia.

Similarly, no correlation was found between the type of schizophrenic diagnosis on the one hand, and race, fasting blood sugar, number of hours of shock, change in systolic and diastolic blood pressures, the occurrences

of cardiac abnormalities, the interruption of treatment for other causes, or amount of weight gained during the treatment, on the other.

Certain features appear to be characteristic in the paranoid schizophrenics treated in this series. These paranoids were significantly older than the catatonics or hebephrenics and fewer of them had had electroshock therapy before they received insulin. The minimum dose of insulin necessary to produce shock in the paranoids was less than in the other two groups, and they had fewer convulsions than the catatonics and hebephrenics. Although the postshock evaluation in the paranoids was superior to that in the other two varieties, the end results in terms of discharge and recovery were not significantly better.

Duration of Psychosis.—The duration of the psychosis was determined on the basis of the date of the first psychiatric report made on the patient or on the history of onset of common symptoms of psychosis as evaluated by competent observers. If the date of onset was unknown, the case was so classified.

There was a significant positive correlation between the duration of the psychosis and the discharge and recovery rates. Analysis showed that patients with the shorter illnesses had the higher recovery rates (see Table 6). The data show that long duration of psychosis before treatment, especially more than 2 years, is an unfavorable prognostic factor.

Immediate Postshock Evaluation.—The evaluation of the effectiveness of insulin shock therapy, in terms of marked improvement on the one hand or no improvement on the other, 1 to 3 days after the cessation of treatment, was found to be fairly accurate when this evaluation was compared later with the status of the patient in terms of being discharged or remaining hospitalized. For example, 91.2% of those patients rated as markedly improved immediately following insulin shock therapy were discharged from the hospital on the basis of recovery due to treatment. However, relapses in these patients were slightly higher than for the entire group, so that at the end of the evaluation period only about 20% of those who had been given a marked improvement postshock evaluation were considered as socially recovered.

TABLE 6

DURATION OF PSYCHOSIS VS. DISPOSITION

Months of psychosis	Number of patients	Discharges		Relapses		Remain discharged % of original No.
		Number	%	Number	%	
Entire series (393 patients)						
1-12	118	41	34.7	13	31.7	23.7
13-24	95	29	30.5	12	41.4	17.9
25+	170	25	14.7	8	32.0	10.0
Unknown	10	4		1		
Without prior electroshock (193 patients)						
1-12	78	33	42.3	12	36.4	26.9
13-24	43	16	37.2	9	56.3	16.4
25+	67	14	20.9	5	35.7	13.4
Unknown	5	2		1		

Relapse Rate.—The relapse rates are shown in Tables 4, 5, and 6. There was no significant correlation between various clinical diagnoses and the occurrence of relapses. One-half of the relapses studied occurred in the first year following therapy, and three-fourths in the first 2 years after treatment.

The relapse rate was approximately twice as great in those who were discharged following insulin shock therapy as their first form of treatment as in the group that had prior electroshock therapy without recovery (Table 4).

In both groups the relapse rate was highest in those between 21 and 25 years of age and lowest in those over 30 years of age (Table 5). The wide range in relapse rates (52.0% to 12.9% and 64.7% to 18.2%) greatly modifies the remarkably uniform discharge rates for the age groups between 21-25, 26-30, and 30+ years. As a result, the older age groups definitely show the best final recovery rates (Table 5).

The relapse rate is higher in patients whose illness duration is between 1 and 2 years than in those who have either been sick less than 1 year or over 2 years (Table 6).

Prior Electroshock Therapy.—As may be expected, the use of electroshock therapy prior to the use of insulin cures a certain percentage of patients and also leaves a residue of cases many of whom may not be responsive to any form of shock treatment. This is reflected in our series of cases. There were 185 schizophrenics who had been given electroshock therapy prior to insulin shock, and these cases showed a discharge rate of 17.8% (see Table 4). It was found that patients diagnosed as paranoid schizophrenics had been subjected to less electroshock therapy than those diagnosed as catatonics or hebephrenics, probably because some reports in the literature suggest that insulin shock therapy is more effective in the paranoid type. Also, those patients who had received courses of electroshock therapy showed a decreased tendency to have convulsive seizures during insulin shock therapy. During the course of a series of electroshock treatments, resistance to seizures is gradually produced and the voltage dosage is thereby necessarily increased. One may hypothesize that this resistance to seizures is retained and carried into subsequent insulin shock therapy.

Further Electroshock Therapy.—Data found in this report support the contention that those patients who have received insulin shock therapy and did not recover can be benefited by the use of further electroshock therapy. One hundred patients in our series received subsequent electroshock therapy and for the purpose of this paper were considered as insulin shock failures. However, 15 (or 15%) were discharged as improved after electroshock therapy. Seven of these patients have relapsed (in 4-51 months). The average duration of the psychosis in these patients was approximately 22 months, and the average length of the recovery period to the time of evaluation is approximately 13 months. These statistics demonstrate that a failure with one type of shock treatment should not preclude an attempt with another form of therapy even though the length of psychosis is over 18 months.

Further Insulin Shock Therapy.—The effect of a second course of insulin shock therapy was studied in 2 groups of patients. Twenty-three cases who did not respond to a first course received a second course, and only 1 of the 23 (or 4.2%) showed sufficient recovery to permit his discharge from the hospital. A second group of 6 cases showed recovery sufficient to permit discharge from the hospital following a first course of insulin shock therapy, but later suffered relapses and were returned to the hospital. These 6 cases were given a second course of insulin shock and only 1 of them underwent a second remission sufficient to warrant discharge from the hospital.

Convulsions.—In this series those patients who had experienced 2 or more convulsions during their course of insulin therapy had a better recovery and discharge rate than those with one or no convulsions.

It was found that patients who received electroshock therapy prior to insulin treatments had fewer convulsions than did those who had not received electroshock treatments. No correlation was found between the incidence of convulsions and the age of the patient or the occurrence of cardiac abnormalities during the course of treatment.

Fasting Blood Sugar.—A study of the correlation coefficients shows that there is a tendency for patients with a higher fasting blood sugar to require a lower minimum dose of insulin to produce shock. However, this difference in blood sugar is not large enough to be medically significant. The correlation for fasting blood sugar is negative in relation to age, diagnosis, hours of shock, maximum dose, convulsions, and weight gained per day.

Weight Gain.—Of the 393 patients in this series 391 showed a gain of weight during insulin shock therapy. The range in average weight gain was from 0.06 to 0.6 pound per day. Weight gain showed a better correlation with the physician's evaluation of the improvement of the patient immediately following insulin shock therapy than it did with the ultimate recovery of the patient.

There was no significant mathematical correlation between amount of weight gained per day on the one hand, and age of the patient, type of schizophrenic diagnosis, fasting blood sugar level, the maximum and minimum dose of insulin, and the total hours of shock, on the other.

Length of Treatment.—A study was made

to ascertain the possible importance of the number of shock treatments, and of the total hours of shock with respect to discharge and recovery rates. No significant relationship was found. There was no correlation between the number of shock treatments and the total hours of shock on the one hand, and age and diagnosis of the patient on the other. The total hours of shock did not show a correlation with the fasting blood sugar or the amount of weight gained during the treatment.

Blood Pressure.—A study was made of the recorded blood pressures of approximately 200 patients on the first 5 and last 5 days of their treatment periods. The average blood pressure of these 200 patients at the beginning of treatment was 115/72. At the termination of the treatment the blood pressures were very little changed; the mean of the systolic pressures was slightly lower and the mean of the diastolic pressures slightly higher.

Dosage.—The dosage of insulin administered during coma ranged from 10 to 600 units. The only significant correlations found with respect to the dosage were that those patients who had a high fasting blood sugar showed a tendency to require a smaller dose of insulin to induce shock and that there was a marked difference in the amount of insulin necessary to produce shock in the varieties of the schizophrenic reactions. The paranoid schizophrenics required the smallest dose (52.4 units), the hebephrenics were intermediate (72.9 units) and the catatonics required the highest dosage (82.1 units).

Complications.—During the period of insulin shock therapy certain technical difficulties and complications arose that necessitated temporary or permanent interruption of treatment (Table 7).

TABLE 7

REASONS FOR INTERRUPTION OF TREATMENT

	No. of cases
Technical difficulties	
Insulin resistance	8
Profound coma	5
Feeding problems	5
Hyperactivity	3
Complications	
Respiratory infections	17
Cardiac abnormalities	12
Local infections	5
Fractures	2

Morbidity and Mortality.—During the interim of treatment of 393 patients there occurred an over-all morbidity rate of 10.3%.

In the total series of cases, there were 2 deaths attributable to insulin shock treatment, giving a mortality rate of 0.5%.

CONCLUSIONS

1. Insulin shock therapy was found to be effective in the treatment of 182 cases of schizophrenia in the following terms: discharged from the hospital, 34.1%; remained discharged after a period of 21 to 75 months, 19.8%; and full social recovery (after that period of time) estimated at about 6%. These figures indicate that insulin shock therapy is certainly not sufficient as a sole form of treatment in schizophrenia. It may have more value when used as a preliminary approach to psychotherapy or milieu therapy. On the other hand the low social recovery rate, after 40 months (average) of evaluation, is discouraging.

2. Race was not a significant factor in this form of therapy.

3. The older the patient the better the remission status following therapy, *i. e.*, fewer relapses occurred.

4. There was no indication that insulin shock therapy is especially effective in any particular type of schizophrenic reaction.

5. The effectiveness was found to decrease as the length of illness prior to therapy was increased.

6. Of 182 schizophrenic patients showing remission after a course of insulin shock therapy as the first form of shock treatment, 41.9% later suffered relapses, within a time evaluation period averaging 3½ years.

7. Insulin shock therapy was effective in some patients (17.0% of cases) who had failed to respond with electroshock treatment.

8. Electroshock therapy was effective in some patients (15.0% of cases) who had failed to respond with insulin treatment.

9. A second course of insulin treatment was found to be of very little value if the patient had failed to respond with the first course.

10. The level of the fasting blood sugar prior to insulin shock therapy had no effect on the outcome of the treatment.

11. Almost invariably a substantial gain in

weight was produced during the course of insulin shock therapy. This had little bearing on the ultimate improvement of the patient.

12. The length of treatment was of no value in estimating the prognosis.

13. Convulsive attacks during insulin coma seemed to have a favorable therapeutic effect.

14. There was no marked change in blood pressure following insulin shock therapy.

15. Paranoid schizophrenics required a smaller dosage of insulin to produce symptoms of hypoglycemia than did the other types of schizophrenia.

16. Insulin shock therapy can be expected to produce certain complications and a mortality rate of about 0.5%.

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WILHELM LANGE-EICHBAUM AND "THE PROBLEM OF GENIUS"

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On September 4 of last year Dr. Wilhelm Lange-Eichbaum died in his home town, Hamburg, in his seventy-fifth year. Originally a sculptor and successful author of stories and plays, an ardent chess player, and sailing enthusiast, he devoted his life to the study of psychiatry as a disciple of Gaupp's famous school at the University of Tuebingen. Since 1928, he worked in a rather inconspicuous position at the University of Hamburg. His life work concentrated on establishing pathography as a science, combining psychiatric and sociological insights. His monumental work, "Genius, Insanity, and Fame," whose fourth edition is in preparation, will remain a landmark in the history of our science. An English condensation was published in London in 1931 under the title "The Problem of Genius." Dr. Lange-Eichbaum laid the groundwork in careful pathographies of famous geniuses, the last being a fascinating study on the newly discovered hospital history of Nietzsche (reviewed in detail in *Journal of Clinical Psychopathology,* April, 1948).

Former investigators set out from their philosophy for a solution of the problem of genius with the aid of metaphysics, but Lange adopts the opposite method. By collecting everything in the world of living reality that manifests itself as genius, he asks sociologically who is recognized by others as a genius—by whom, by what period and society, and by what nation? What is experienced as the value of genius? Which human types are preferred? Different nations—no less than different ages—idolize and deify totally different types of human beings. In classical days the sage and philosopher were ideals; in the Middle Ages, the saint; in the days of the Renaissance, the courtier, statesman, and wit. The bourgeois epoch paid homage to the productive writer and sculptor; today the great technician, calm and controlled, is far more highly esteemed than the lyricist. Experience shows that the notions of hero, saint, demigod, and genius merge into one another and that is why among them are found even persons of intellectual narrowness and of gross error. But they were intermediaries of new values for many thousands of consumers, and sometimes this was the fruit of mental disorder.

Genius is a functional concept: the sociological, religious, and psychological relationship of a bearer of spiritual values to the consuming congregation of mankind. The show that the public enjoys is more a creation of the audience than of the actors. Through the admixture of psychopathological elements, their personality, work, and history have acquired that strangeness and flavor of mystical awe that seems almost an essential pacemaker to arouse sentiment of veneration, the sanctity of genius.

While this new approach to the problem of genius was, and still is, disapproved by the humanities, and is far from being generally recognized, two illustrations might prove the uncanny foresight, irrespective of Nietzsche's skeptic motto, with which Lange prefaced his life work: "Fortunately books are for most people merely literature." Several years before the appearance of Hitler, he wrote in his "Problem of Genius," 1928, translated in 1931, as follows:

> In all departments of life there are conspicuous leaders who would never be termed geniuses or venerated as such—leadership, however, is not infrequently acquired through "mass psychology." In so far as this is the case, the masses are apt to follow those characterized by a certain lack of talent, persons who are akin to the crowd through their blind impetuousness, childishness, and impulsive passion. The sense of kinship makes the crowd follow such persons blindly. These are the characteristics of many popular heroes, revolutionists, army leaders, and orators. It is through the possession of qualities which are by no means entitled to be regarded as "great gifts" that they first become leaders of the masses, and subsequently perhaps are venerated as geniuses.

Shortly before his death, he published a new pathography on Nietzsche,[1] his disease and his influence, proving once more brilliantly and tragically the fruitfulness of his

[1] Lange-Eichbaum, Wilhelm. Nietzsche, Krankheit und Wirkung, Third Edition. Hamburg, 1948.

approach by utilizing Nietzsche's lost hospital history, a copy of which was rediscovered in 1930 in the attic of a Hamburg neurologist.

The first part of the book deals with Nietzsche as a psychiatric problem, the second with his influence and aftereffect. At the time of his admission to the Jena Psychiatric Clinic in January, 1889, the diagnosis of general paralysis was well established. Aside from the neurological symptoms, two mental syndromes alternated: a euphoric expansive mood with flourishing ideas of grandeur and marked dementia; and a paranoid syndrome with persecutory ideas and hallucinations. More difficult to evaluate are the earlier stages, especially the decade 1880-1889 in which his most famous and debated works coincide with his period of feverish activity of production (1881-1883). Lange rallies a great number of reasons to believe that the new psychopathological experiences of this hypomanic period were already an initial manifestation of a stationary paresis.

There are a number of psychological details from Nietzsche's earlier life of special interest to the social psychiatrist for understanding Nietzsche's appeal. He was extremely vain. He never quoted the sources of his main ideas. He knew only the bordello or entirely platonic friendships with women. Until his late psychosis he was a very compassionate man, contrary to his written attacks against mercy. Most revealing, however, are his wish dreams of grandeur at the outbreak of his psychosis. He planned to provoke Germany into a war of despair. It has been a fateful repetition, in Germany and elsewhere, that every mental attitude fed by emotions and mood, resentment and protest, appeal to the population when presented in the high-sounding pathos of the prophet.

The ideas of Nietzsche were translated into reality through the actions of fanatical one-track minds. This is tantamount to a sociological disease, the catastrophic results of which are obvious from the experience of the whole world in recent years.

If books like this would help to overcome the prejudices in our own ranks by showing that not a debunking or degradation of genius, but a deeper understanding and admiration will result—then we may even hope that future studies in this hardly charted field of pathography might develop into a most far reaching application of preventive group psychiatry, forestalling such devastating hero worship in the future as we experienced in the last decade.

The American scene was beyond the knowledge and reach of Lange, whose formative years were still in the nineteenth century. His approach, however, anticipated the modern trend of American psychiatry. Our history abounds in great and splendid characters and we have hardly begun to study them from a pathographic viewpoint with the equipment and restraint of our science, which Lange's pioneer enthusiasm occasionally overstepped.

He was one of the many great examples of brilliant and noble minds, "withering away behind the window," himself a frustrated genius, unknown and unrewarded by the public at large. His was a highly individualistic nature, uncompromising in the pursuit of his research. Since the beginning of the century, his wide knowledge of history, his clinical experience, and his sparkling style fought for the legitimate rôle of psychiatry and sociology in contributing to a deeper understanding of history and the building of a more humane future. For many years to come, his pioneer work will guide and challenge the student of the emerging new science, the pathography of genius.

THE CLINICAL INVESTIGATION AND DIFFERENTIAL MEASUREMENT OF ANXIETY[1]

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Psychiatric thinking today acknowledges the primary importance of anxiety as a psychopathogenic factor. Therefore, etiological assessment, quantitative and qualitative analysis, and therapeutic management of anxiety have become a matter of concern to the psychiatrist.

Since Sigmund Freud's masterly analysis of anxiety in his book, "Hemmung, Symptom und Angst," and Levy-Valensi's volume "Les Etats Anxieux," anxiety as a problem and as a clinical reality has been approached mainly from the descriptive and pragmatic point of view. Only during and after the last World War was anxiety first investigated by experimental means, using physical, physiological, pharmacological, projective, and nonprojective techniques.

However, the great majority of experimental procedures used in the diagnostic investigation of anxiety are complicated, costly, and time-consuming. The practicing psychiatrist still remains completely dependent on his intuitive clinical judgment, his knowledge of the case history, and his more or less subjective interpretation of dreams and free associations. Because of the increased demand for psychiatric services it has become necessary to develop methods by means of which anxiety can be validly and quickly explored and measured by the psychiatrist himself during one interview. Diethelm(1) recently has described such an approach to anxiety, based upon the influence of apprehension upon attention, concentration, learning, and retention. While it is generally accepted that anxiety modifies intellectual functioning (*e. g.*, scatter patterns in intelligence-test results) and imaginative activity (*e. g.*, Rorschach, TAT), it is less known to what extent and in which way anxiety effects visuo-motor control, self-concept, level of aspiration, and body-image in most psychopathological syndromes.

CLINICAL METHODS

In the author's opinion anxiety is intimately connected with the function of personality integration. Whenever the organism becomes aware of potential threat or danger, anxiety is mobilized and induces the formation of defenses against the threats which are disintegrative to the personality and endanger the ego. Anxiety can thus be thought of as an alarm-mechanism to preserve personality integration. It is therefore logical to assume that anxiety can be best studied in its effects upon those personality aspects which show a marked integrative character. Such integrative traits among others are visuo-motor control, self-concept, level of aspiration, and body gestalt.

Easily administered and quickly interpreted measures of the effect of anxiety on each of these 4 aspects of personality will now be described. These methods are: (1) Katography, (2) Interpretive Projection Technique, (3) Level of Aspiration Test, and (4) Draw-a-Person Test.

1. *Katography* is an experimental procedure, which consists in a specific kind of mirror-drawing (not tracing) and investigates mainly the flexor-extensor-coordination in simple mirror-drawing movements, like those of joining distant points with and without visual control. This technique has been developed and put to clinical use for several years by Dr. David Wechsler and the author at the Bellevue Psychiatric Hospital, New York, and at the Allan Memorial Institute of Psychiatry, Montreal. On the basis of our statistical material obtained on thousands of patients with severe anxiety tension and control groups of so-called normals without any marked anxiety, we may say that katography is a reliable and valid procedure for the assessment of anxiety(2). The procedure itself is easily administered to any person, able to hold a pencil in the

[1] Read at the 105th annual meeting of The American Psychiatric Association, Montreal, Quebec, May 23-27, 1949.

[2] New York Psychiatric Institute and Hospital, New York.

right or left hand, within a maximal time-limit of 360 seconds for both part I and part II. Each katographic performance is scored according to: time, distance, speed, spread, field distribution, pressure, segmentation, linear characteristics, blocks, blind drawing, and test-retest-comparison. These criteria correspond to the following factors of anxiety: degree of primary and secondary anxiety-tension, anxiety-control, anxiety-projection, danger zone, reaction to threat, reaction to anxiety, degree of anxiety awareness, proneness to anxiety reactions, degree of available courage, capacity for recovery from anxiety. These are the factors of anxiety, which seem to modify visuo-motor control in various characteristic ways and may therefore be used for the qualitative and quantitative assessment of anxiety.

2. *The Interpretive Projection Technique* (I P T) is a procedure which permits clinical investigation of still other aspects of anxiety. Not only does it supplement and corroborate findings, arrived at by means of nonprojective katography, but this method digs further into the psychodynamic foundations of anxiety. More specifically, it explores a psychological function which is extremely sensitive to the effects of anxiety, namely the self-concept. A person's own view of himself and his awareness of relative self-value (direct self-concept) determines not only his apperception of others, but also his own view on how he is perceived by others (indirect self-concept). In order to explore the self-concept experimentally, the author devised the Interpretive Projection Technique more than 15 years ago and has since then continually refined the technique as a clinical tool. In this procedure, the subject is confronted with a structured, but very ambiguous stimulus: photos of pairs of human eyes. He is requested to imagine, sense, or infer a complete personality description corresponding to each pair of eyes. It appeared from our research that a personality interpretation based upon the impression gained from a pair of eyes does not provide any reliable psychological information about the person to whom the eyes belong, but furnishes valuable psychodynamic material about the person who does the interpretation. In the final form of our procedure, we present successively photos of 6 pairs of eyes which have been selected from a great number of studied pairs. These 6 cues offered the greatest variability of possible projective responses. The scope of the experimental task, consisting in a personality interpretation of a strange human being whose eyes are exposed, is so enormous and the stimulus so insignificant and unreliable, that intensely projective material has to be produced. The tested subject is thrown back upon the resources of his own self-concept, consisting of ego-ideal, ego-reality, and ego-threat and, while he thinks he is interpreting others, he unconsciously reveals his own direct and indirect self-concept. His own anxiety-tension and its dynamic sources are projected into others, the cue-subjects, more easily and with less secondary apprehension, guilt, or shame than if direct admission of anxiety and its implications had been sought by an examiner. The time for administration is on the average 3 minutes per cue, but can be prolonged if through a more intensive directed inquiry more material is elicited. The frequency with which anxiety is spontaneously projected into the cue-personalities, the character of the involved threats, and the introjected attitudes to anxiety and threat represent the factors upon which an assessment of anxiety by means of the I P T is based.

3. *The Level of Aspiration* procedure is a method which investigates primarily goal-setting behavior. In the simple pencil and paper form in which it has been used by us it does not only expose goal-setting patterns, reaction to frustration or successful attainment, goal-rigidity and confidence-level, but will also reveal anxiety as it is related to an individual's level of aspiration and his goal-striving attitudes. As the experiment is administered in 3 minutes, this important aspect of anxiety is within easy reach of clinical investigation, the more as it permits measuring a person's reaction to experimentally induced frustration and success in quantitative terms.

4. *The Draw-a-Person* technique is used for the exploration of anxiety, originated by or connected with the body-image. The perception of one's own bodily structure

and its actual or imagined disturbances or shortcomings projects itself into the execution of the task, "draw a person." Presence or lack of artistic-technical training has no deciding influence whatsover upon the drawing performance and its evaluation. We might even say that the technically unprepared or artistically inadequate person may present more significant clues for an interpretation of his drawing performance than the artistically prepared or trained individual.

Before we proceed with a description of the results obtained and obtainable by means of the described procedures for the investigation of anxiety, some information on the validation of these methods seems to be in order.

While practical methods for complete validation of psychodynamic findings are still lacking, Katography, Interpretive Projection, and Level-of-Aspiration Technique have been validated with respect to the source trait of anxiety and its modalities and definite clusters could be established between the separate measurements of these procedures and the ratings of clinical judges. Although the Draw-a-Person Method is a qualitative procedure very difficult to validate, indicators of anxiety could be obtained which correlated highly with anxiety-indicators arrived at by means of the 3 first-mentioned procedures and with clinical findings. All measurements have been correlated with age, sex, and intelligence level of the subjects in experimental and control groups, although more detailed statistical operations will be necessary to clarify some more general aspects of anxiety measures. The katographic findings are at present in the process of being investigated by means of measurements of blood pressure, of muscle tension, and heart rate in relatively small clinical and control groups, and the already obtained promising results will be published separately by Drs. Malmo and Shagass (McGill University Medical School). These investigations have already shown that alterations in blood pressure, heart rate, and muscle tension, different from the normal, may be observed in anxiety states during the katographic performance.

In this presentation, we shall limit ourselves to a short report on our findings in the following psychiatric syndromes: anxiety-neurosis, conversion hysteria, obsessive-compulsive neurosis, involutional depression, incipient schizophrenia, and brain damage. Although the described procedures have been applied to nearly every psychiatric condition in which anxiety is assumed to play a rôle, we chose the before-mentioned 6 clinical conditions because in them anxiety plays admittedly a primary rôle as etiological factor or as symptom or as both.

Results

1. *Anxiety Neurosis.—The mirror-drawing* performances of patients with anxiety neurosis were characterized by high time and distance scores, extensive unilateral spread, proximal dextral field-distribution, angular changes of direction, tremor, intense segmentation. Heavy, initial, often unresolved graphomotor block was so frequent that it became nearly a pathognomonic sign for anxiety neurosis. The more marked the anxiety-tension was, the less a learning-effect on retest became noticeable. We conclude that in anxiety neurosis a marked anticipatory readiness for anxiety-reactions might be responsible for the observed visuo-motor disturbances.

Interpretive Projection reveals a self-concept characterized by an overwhelming and all-pervading anxiety, aroused by unknown threats or dangers and leading to generalized feelings of helplessness and secondary depression.

The Level of Aspiration Procedure showed in 81.2% of all 215 cases of anxiety neurosis an unduly high initial level of aspiration, with the following goal-levels kept intentionally low enough to avoid subsequent failures.

The Draw-a-Person Technique presented many anxiety-indicators like marked concealment or shading of body parts with sexual significance, fragmented and occasionally reinforced lines, omissions or concealment of hands, absence of leg spread, rigid posture, presence of base line, short extremities, head drawn last, low pressure, emphasis on nonessentials, masculinization of female figures or femininization of male figure. The body part which received the maximum

of attention pointed frequently to the immediate source of conflict and anxiety.

2. *Conversion Hysteria.*—The *mirror-drawing* performances of patients with conversion hysteria showed in 76% of all cases (181) a cluster of graphomotor criteria, consisting of low-to-medium time scores, retensive bilateral spread, proximal field-distribution, heavy variable pressure, increased segmentation, absence of a marked, initial block, tendency to intermediate blocking, noticeable training effect on retest. This type of performance denotes repression of anxiety-awareness with insecure anxiety-control (blocking). *Interpretive Projection* revealed a self-concept in which needs for narcissistic gratification, for avoidance of guilt and physical harm, and for continued moral support became evident. The discrepancy between direct and indirect self-concept was very marked. *The Level of Aspiration* procedure was generally indicative of the fact that individuals with conversion hysteria start with high initial goal levels and maintain them fairly high in spite of low-level achievements (histrionic-naive attitude). *The Draw-a-Person Test* emphasized symbolically in 81% of all conversion cases the body parts or functions used for purposes of secondary gain. The persons drawn by patients with conversion hysteria were infantile in concept and form.

3. *Obsessive-Compulsive Neurosis.*—The majority (86.2%) of patients with obsessive-compulsive characteristics (83 cases) presented *katograms* exhibiting the following cluster of graphomotor criteria: very prolonged reaction-time (120-180 seconds), low speed, retensive bilateral spread, medial field-distribution, light pressure, frequent simple stops, very intense segmentation, resolved initial block, and insignificant training effect on retest. Such a performance indicates excessive cautiousness, circumstantiality, perfectionism, defense against and rigidity in dealing with potential threats. *Interpretive Projection* revealed a self-concept conspicuous by the many trends expressing uncertainty and ambivalence with reference to the self, furthermore the need for rigid self-control, the presence of superego-conflict and self-distrust, projected as social distrustfulness. The *Level of Aspiration* procedure showed in 93% of the obsessive-compulsive cases an overly low initial level of aspiration, with subsequent careful adjustment of estimation-levels to preceding attainments. In their *Drawing-a-Person,* obsessive-compulsive patients tended to give exaggerated attention to insignificant details, especially to shoes, buttons, fingernails, eyes, and ears. They made noticeable but rarely successful attempts at symmetry. They showed an intense need for correct, reinforced outlines as well as disturbances of head-body proportions.

4. *Involutional Depression.*—The *katographic performances* of patients with involutional melancholia showed with statistically significant frequency (79% of 64 cases examined) the following cluster of graphomotor criteria: severely prolonged reaction-time (noncompletion within time limits), low speed, extensive unilateral spread, proximal dextral field-distribution, light variable pressure, marked convexity (cascade-like forms) with downward spikes, increasing segmentation, blocking mostly in part II, tendency to deterioration of performance on retest. Such a type of visuomotor control indicates marked secondary anxiety-tension, insecure anxiety-control, mainly endogenous origin of threats, intense anxiety-awareness, decreased capacity for recovery from anxiety. *Interpretive Projection* points toward progressive disintegration of the ego-ideal, increasing awareness of ego-threats with resulting discontent with the self and an awareness of anxiety, secondary to feelings of generalized worthlessness. Direct and indirect self-concept do not show any marked discrepancy. The *Level of Aspiration* procedure obtains routinely evidence for habitual anticipation of failure and a rapidly progressive increase of anxiety during competitive situations (paralyzing effect of the nearing goal). Depressives of the involutional period are conspicuous through their low initial and total level of aspiration and the progressive lowering of their estimation-levels, independently from an achieved success or suffered failure. The *Draw-a-Person* technique shows emphasis on the body axis or midline with frequent lateral inclination of the body axis, weak legs with parallel curvature, preference for small

figure sizes, attention paid to insignificant details without the accuracy of the obsessive-compulsive, noticeable avoidance of the genital zone, preference for seated figures or for figure standing on an insecure baseline. Such a body-image denotes anxious preoccupation with physical decline, discontent with the body-image, especially in its sexual aspects, and increased need for dependence and emotional support.

5. *Incipient Schizophrenia.*—In 92% of 182 cases diagnosed as incipient schizophrenia, the following cluster of *katographic criteria* could be observed: Reaction-times over 150 seconds for each part, unpredictable changes of speed, retensive unilateral spread, sinistral and medio-proximal field-distribution, light variable pressure, noticeable segmentation, pronounced angularity, many recrossings, insignificant initial block, but intense intermediate or severe prefinal block, absence of training effect or deterioration on retest. These criteria reveal an anxiety-pattern in which the proneness to anxiety-reactions apparently has decreased or is delayed by means of the schizophrenic displacement of anxiety. It can, however, be remobilized, at least in incipient schizophrenia, through protracted emotional stress and appears therefore as delayed (intermediate or prefinal) block. Rigidity of the graphomotor adjustment expresses the unlimited helplessness with which the early schizophrenic attempts to manage his own anxiety. *Interpretive Projection* in early schizophrenia points to a self-concept in which needs for isolation and autonomy are prominent and in which own endogenous threats are projected emphatically and often violently upon hated and distrusted cue-subjects. Hallucinations and delusions, especially of a paranoid character, can be very easily and effectively studied by this method. The *Level of Aspiration* technique shows the tendency of the schizophrenic person to meet his own anxiety by lowering the estimation-level after a success and to raise it after a defeat. The *Draw-a-Person* performance of the early schizophrenic is characterized by his tendency to disregard available space and to draw figures which are either too big or much too small, furthermore by his need to separate head and body by means of a long neck, to detach or cut off extremities, to draw uninhibitedly details of the genital zones, to draw multidimensional persons (front and profile shown simultaneously) and to give animal- or flower-like body parts to the human figure. Such performances indicate that the schizophrenic syndrome serves partially to rid the patient from anxieties and threats connected with the body-image.

6. *Brain Damage.*—The majority (79%) of the 129 cases of brain damage or brain tumor which we examined before and after operation presented clinical evidence for increased secondary anxiety. In a few cases this anxiety was so marked that patients had been treated, by nonmedical psychotherapists, prior to the correct medical diagnosis of their lesions, as cases of acute or chronic anxiety neuroses or anxiety-hysteria. In the *katographic* performances of patients with brain damage, the apprehension aroused in the mirror-drawing situation produced a cluster of criteria, in which low speed, proximal field-distribution, tremor, fibrillation, and intense fragmentation were outstanding. Dense initial unresolved blocks, characteristic of the performance in anxiety neurosis, have never been observed in organics. These findings are in accordance with the clinical fact that the anxiety in the patient with brain damage or brain tumor is secondary in character. *Interpretive Projection* reveals frequently an adequate direct self-concept, while the indirect self-concept shows the effects of the patient's progressive anxiety-tension. In the *Level of Aspiration* procedure, patients with organic impairment maintain at first high estimation levels in spite of very low attainment levels, then because of anxiety aroused by defeat either lower their estimation levels very markedly or cling stubbornly to their initial estimation-level. In his *Drawing-a-Person* the patient with brain damage or brain tumor indicates often, but not always, through a particular asymmetry or unusual features of the head or hair or hat the real nature and origin of his apprehension, which appears mainly in insecure outlines, disturbed body proportions or body-part proportions, shortness of the

extremities, and unsuccessful attempts at shading. After a successful surgical intervention, retesting will frequently find a general decrease in anxiety-tension.

Summary and Conclusion

1. Four clinical methods for rapid psychiatric evaluation and measurement of anxiety have been presented.

2. These methods investigate the effects of anxiety upon visuo-motor control, self-concept, level of aspiration, and body-image.

3. Typical results and differential trends obtained through these short procedures in psychiatric syndromes, characterized etiologically or symptomatically by anxiety, have been presented.

We conclude that in view of the primary importance of anxiety as psychopathogenic factor psychiatrists and medical students should acquaint themselves with objective, experimental methods, which can be used in the course of a clinical interview for the differential measurement and analysis of anxiety.

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CLINICAL NOTES

THE PSYCHOSENSORY DISORDERS OF SCHIZOPHRENIA [1]

S. V. KRAIZ, M. D.
U. S. S. R.

Although this paper was published in 1936 its mention seems to be timely, for the phenomena described and the concepts presented are not usually encountered in English psychiatric literature. The author gives 5 case histories of schizophrenics with perceptual abnormalities which he calls psychosensory disorders. He lists these phenomena as follows:

1. Perception of stationary objects as in motion. Thus patient sees walls shaking, stationary objects moving, etc.

2. A change in the perception of the size of objects. Thus objects may appear larger or smaller than their real size.

3. Receding of objects. Objects may look as if they recede from the observer.

4. A change in the perception of spatial relationship. Objects may look as if they were placed nearer or further from the observer than in reality.

5. A change in the perception of the consistency of surrounding objects. Thus objects may impress the patient as being harder or softer than in reality.

6. Constriction and splitting up of field of vision.

7. A change in the perception of the color of objects.

8. A change in patient's perception of his own body. The patient may feel that his head is larger or smaller, that his limbs are elongated, his body lighter or heavier, etc.

The psychosensory disorders usually occur in patients who in their prepsychotic state are active, lively, and of cycloid constitution. In the history of these patients one frequently finds serious infections in childhood: malaria, typhoid fever, and endocrinological disturbances such as obesity, hypogonadism, and irregular menstruations. The course of the illness is very long, developing over several decades, and the patients frequently show manifestations of organic nature such as memory defects. None of the authors' cases presented a picture of well-systematized delusional system. The delusions were fleeting and temporary. The perceptual phenomena occurred in paroxysms. In case number 4 the attacks started with a feeling of depression, dizziness, general weakness, and ended with falling down without loss of consciousness. Because of the paroxysmal nature of psychosensory manifestations the author compares them with epileptic attacks. The organic manifestations bring them close to toxic phenomena such as mescaline intoxication. Thus the author feels that although his cases were definitely schizophrenics they were related to epileptic states of Kleist and that toxicosis was the main pathological factor in production of the symptoms.

In view of the recent controversy over Lysenko's theories on heredity it is interesting to note that a very thorough study of the hereditary background of the reported cases was done by the author and that the explanation of the dynamics was presented on a purely organic basis.

[1] This abstract of a paper that appeared in the Russian journal Neuropatologia, Psychiatria i Psychogigiena, 5: 615, 1936, was submitted by Dr. Eugene Revitch of the VA Hospital, Lyons, N. J.

CORRESPONDENCE

VISITS TO BRITAIN THIS SUMMER

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: We anticipate that a good many of our psychiatric colleagues will be visiting Europe this summer, not merely because of devaluation, but primarily because there are three conferences of interest being held in Paris: the Annual Meeting of the World Federation for Mental Health, from August 31 to September 7; the International Congress of Criminology, from September 9 to 18, and the International Congress of Psychiatry, from September 18 to 27.

We hope that some at least of those from the Americas who are planning to attend these meetings will be visiting us in Great Britain, and since we should like to be hospitable and also of service in arranging contacts and visits of interest, we suggest that those who are hoping to be in this country should notify Dr. Alfred Torrie (National Association for Mental Health, 39 Queen Anne Street, London, W. 1.) of their intentions and of their dates.

The holiday months of the year are always slightly difficult from the point of view of contacts, but we will try to arrange whatever is possible for those who let us know that they are coming to this country. On this side of the water we appreciate these visits from colleagues in the Americas very greatly, and that is why we should like to be informed beforehand of any expected visitors.

ALFRED TORRIE
(National Association for Mental Health),
H. V. DICKS
(Medical Section, British Psychological Society),
K. K. DRURY
(Royal Medico-Psychological Association),
W. J. T. KIMBER
(Section of Psychiatry, Royal Society of Medicine),
WALTER MACLAY
(Ministry of Health),
H. A. SANDIFORD
(International Medical Visitors' Bureau, B.M.A.),
J. R. REES
(World Federation for Mental Health).

COMMENT

NOTES ON AMERICAN PSYCHIATRY BY A SOCIAL SCIENTIST

It was gracious of the Editor to ask me to write a brief item for the JOURNAL expressing my views on present-day psychiatry in the United States; but it was probably rash for me to accept. The only justification that I can offer is that I plan to limit my comments to those aspects of the problem that fall within the range of concern, if not within the range of competence, of a student of the social sciences.

Psychiatrists have good reason to seek public support to raise the levels of institutional care and to expand the number of mental hygiene clinics. In advocating early and comprehensive treatment for patients with psychoses, and in insisting on the maintenance of a satisfactory environment for patients who are chronically ill, psychiatrists are on firm ground. They need not make exaggerated claims about the efficacy of modern therapy; a high quality of care can still be justified even if many patients fail to respond to treatment.

Likewise, when psychiatrists advocate the expansion of facilities for patients with neurotic difficulties, they need not claim that psychotherapy will aid every patient. As long as there are many who can be helped to function more effectively, one need not become overconcerned with the inability of many patients, particularly those who live under oppressive conditions, to profit from treatment. Too many psychiatrists tend to generalize about psychotherapy in terms of their private practice where patients are usually drawn from a selected upper-middle-class group with the advantages of education, professional skill, and family resources.

It is surely a sign of progress that psychiatrists are becoming increasingly concerned with the preventive aspects of their discipline. But it is questionable whether they fully appreciate how little they know concerning the factors that contribute to or militate against the development of neuroses and psychoses. In the face of this limitation, psychiatry can make two contributions. It can stress the importance of mental hygiene principles and practices, particularly for those who have a day-to-day relation to children—parents, teachers, nurses. And it can emphasize that early treatment may prevent certain disturbed youngsters from developing serious emotional problems at a later date.

Psychiatrists are becoming increasingly concerned with their social responsibilities, for they cannot overlook the fact that the world in which they live and practice gives clear evidence of destructive tendencies. Every profession has not only the right but the responsibility to contribute to the formulation of social policy. But it is a sign of maturity to proceed cautiously in the formulation of a social diagnosis or in the advocacy of a particular social therapy. Many psychiatrists have failed to demonstrate that they appreciate the complexity of contemporary social problems, a failure that raises serious doubts, even among friendly critics, of the ability of psychiatry to contribute to the solution of these problems.

During the past years a more effective base has been developed for cooperative relations between psychiatry and the allied disciplines. But there is need for further clarification and experimentation. What is the proper rôle of the family physician? How can he best contribute to the maintenance of mental health? What is the most effective way for the clinical psychologist, the psychiatric social worker, and the psychiatrist to share the admittedly large work load? These are difficult issues to clarify, but the public has need to be reassured that the senior group—psychiatrists—will work toward a solution in terms of their broad professional responsibilities and not in terms of narrow self-interest.

A further sign of progress is the fact that the learned journals report an increasing number of research projects on which psychiatrists have collaborated with social sci-

entists. However, such collaboration is still at an early stage. The major barrier to effective collaboration is the present state of psychiatric theory. Although it offers the social sciences what is perhaps the only dynamic theory of personality, it is a partial and imperfect theory. Its major development has been in the understanding of instincts, with little exploration of the rôle that reality factors and values play in the development of the mature personality.

The major problems confronting contemporary psychiatry point to a marked discrepancy between the quality and quantity of psychiatric resources and the existing and latent demands on these resources. It is questionable whether this gap can possibly be closed in the foreseeable future through increasing the quantity of available resources. Unless one is willing to be reconciled to a more or less permanent deficiency, a major effort must be made through research and experimentation to advance on the qualitative front.

The challenges to contemporary psychiatry are tremendous: the need for more and better institutional facilities for patients with psychoses; an expanded and improved system of clinics for patients with neurotic difficulties; greater understanding of the principles of mental hygiene by all leadership groups, particularly those who have a close relation to children; a constructive use of psychiatric principles in the formation of social policy; the stimulation of the social sciences by an improved theory of personality. These are but a few of the major challenges. They cannot be met solely, or even primarily, by increasing the number of psychiatrists. The real hope is to advance the frontiers of psychiatry. And the progress of psychiatry in the future, as in the past, will depend on gifted scientists devoting themselves wholeheartedly to a study of human behavior and its infinite vagaries.

ELI GINZBERG, PH. D.,
Columbia University.

NEWS AND NOTES

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, 75TH ANNIVERSARY.—The January 6, 1950, issue of this highly esteemed organ of German medicine commemorates the 75th year of publication. When Paul Börner founded the *Deutsche Medizinische Wochenschrift* in 1875 the then unknown physician Robert Koch at his home in Wollheim was peering through a new type of microscope that his young wife had presented to him as a birthday present. Neither Börner nor Koch was aware that in the coming years they would be working in closest collaboration and neither realized that this year 1875 could be regarded as the birth hour of a new and splendid epoch in German medicine, marking the beginning of microbiology, the discovery of the agents of infection, and the specificity of infectious diseases.

This significant year falls also within the period of the greatest discoveries in the field of applied science. Never before had German scientific research exerted such powerful and worldwide influence.

Speaking editorially the *Deutsche Medizinische Wochenschrift* traces briefly through the years the triumphs of German medicine, which all the world has acclaimed. In 1946 after so unhappy an interruption it resumed the task of keeping the record of medical progress in Germany and throughout the world. During its long career there has scarcely been a great name in German medicine that has not appeared as an author in this time-honored journal, and scientists from many other countries have appreciated the distinction of having their contributions appear in the *Deutsche Medizinische Wochenschrift*. The editors reassert their purpose and obligation to maintain through their authors and readers "the bonds between Germany and all the countries of the world and to make these bonds ever closer, to which end there is no better means than constant striving, free from all prejudices and passions, for truth and knowledge."

DR. MACCURDY RESIGNS.—In accepting appointment by Governor Dewey as medical consultant to the New York State Citizens' Committee of One Hundred for Children and Youth, Dr. Frederick MacCurdy resigned on April 1, 1950, as Commissioner of Mental Hygiene for New York State.

The Committee of One Hundred, recently designated by the Governor, will work with the National White House Conference Committee in developing research and fact finding which New York State will submit as its contribution to the Mid-Century White House Conference on Children and Youth. The Conference, held every 10 years since 1909, is designed to focus attention on existing services for children, developments during the period since the last Conference in 1940, and to point up areas of unmet need in the fields of health, welfare, education, mental health, and related areas.

Dr. MacCurdy's services will still be available to the Department of Mental Hygiene on a consultant basis. Dr. Newton J. T. Bigelow, senior director of Marcy State Hospital and a former deputy commissioner and acting assistant commissioner, has been appointed Acting Commissioner to succeed Dr. MacCurdy. Dr. Bigelow has been in the state service since 1929.

RETIREMENT OF DR. CREASE OF BRITISH COLUMBIA.—Dr. Arthur L. Crease, for 25 years the administrator of the mental hospitals of British Columbia, retired as Director of Mental Hygiene and Psychiatry, March 31, 1950. A graduate of McGill, Dr. Crease joined the B. C. mental hospital service after 4 years of postgraduate training in the hospitals of Rhode Island. During his administration the psychiatric facilities of the province were greatly expanded by the addition of many new services, and the standards of care and treatment of patients in the mental hospital were substantially raised. His professional career was climaxed in November 1949, when the Crease Clinic of Psychological Medicine was officially opened.

On the afternoon of March 10, 1950, the staff and friends of the hospital gathered at the Crease Clinic to congratulate Dr. Crease

on a job well done and to present to him a grandfather clock with a suitably engraved plaque, the gift being subscribed to by over 1,000 members of the staff.

Succeeding Dr. Crease as Director of Mental Health Services in B. C. will be Dr. Arthur M. Gee, who for over 25 years has been closely associated with Dr. Crease in various administrative capacities in the B. C. provincial hospital services.

NEUROPSYCHIATRIC SOCIETY OF VIRGINIA.—At the spring meeting of this Society in Williamsburg on March 31, 1950, the following new officers were elected: President, Dr. James K. Morrow; Vice-President, Dr. R. Coleman Longan, Jr.; Secretary-Treasurer, Dr. James B. Funkhouser. The Society now has 90 members.

MENTAL HEALTH STATISTICS.—From the National Institute of Mental Health statisticians Warren W. Morse and Charles C. Limburg have prepared a 12-page folder giving in considerable detail information about psychiatric outpatient clinics of various types throughout the country as for the year 1947. A map of the United States is included showing location of all clinics. From this map it appears that 5 states were without psychiatric outpatient clinics of any kind: Idaho, Nevada, Utah, Wyoming, and South Dakota. This report dated March 1950 can be obtained from the U.S.P.H.S.

KINGS COUNTY HOSPITAL VACANCIES.—This Brooklyn hospital wishes to fill the positions of psychiatric resident, junior psychiatrist, and senior psychiatrist. The Psychiatric Division is housed in a modern 7-story, 400-bed structure with extensive inpatient and outpatient facilities. The hospital conducts an approved 3-year residency program in psychiatry under the supervision of the department of psychiatry of the New York State University College of Medicine (previously the Long Island College of Medicine).

Minimum requirement for a staff position other than a residency is the completion of three years' approved residency training in psychiatry or the equivalent. Inquiries should be addressed to Dr. Howard W. Potter, Psychiatric Division, Kings County Hospital, 606 Winthrop St., Brooklyn, N. Y.

RETIREMENT OF DR. CARRIEL AND DR. RICKETTS.—After many years of service at Elgin, Ill., State Hospital, Dr. Henry Buttolph Carriel and Dr. Joy Ricketts Carriel have recently retired. Dr. Carriel is now 87 years of age, and his life has been spent in the psychiatric environment. His father, Dr. Henry Frost Carriel, was on the staff of the Trenton State Hospital, and his grandfather, Dr. Horace A. Buttolph, who was President of the A.P.A. 1886-1887, was for 42 years superintendent of that hospital. As a boy Dr. Carriel saw much of Dorothea Dix, who made her home at the Trenton State Hospital at his grandfather's invitation.

Dr. Carriel's first post in Illinois was at the Jacksonville State Hospital, where he joined the staff in 1892. For the succeeding 58 years he devoted himself to Illinois institutions, for 36 of them along with his wife, Dr. Ricketts. The Elgin Hospital is sorry to part with the Carriels and the link they have provided with the past history of American psychiatry.

NATIONAL COMMITTEE FOR EDUCATION ON ALCOHOLISM.—This Committee, which for 5 years has been one of the divisions of the Yale Plan on Alcoholism, has now been made an independent health agency, with headquarters at 2 E. 103d St., New York City, in the Academy of Medicine building. This step has been taken in the belief that the Committee can now carry on its work independently of Yale University and on a national scale, utilizing the resources of various state and local organizations. Dr. Harry M. Tiebout is Acting Chairman of the Board.

NEW YORK ADOPTS NEW SEX-CRIME ACT.—Drastic changes have been made recently in New York State's legal procedures to deal with sex criminals. The new law permits indeterminate sentences and makes release from prison contingent upon recommendations by psychiatrists and psycholo-

gists. It also directs the Department of Mental Hygiene to set up diagnostic clinics in prisons and to conduct research into the causes of criminal behavior and methods of therapy. Judges will be obliged to obtain a complete psychiatric report on the offender before sentence is imposed.

This Administration-sponsored law is the result of two year's study of the problem of sex offenders by a special committee.

PROGRAM OF THE INTERNATIONAL CONGRESS OF PSYCHIATRY

PARIS, FRANCE, SEPT. 18 TO 27, 1950

I. SCIENTIFIC PROGRAM

(a) *Afternoon Sessions:*

Section 1: "Psychopathology of delusions"—Chairman—Ferdinand Morel (Geneva); Speakers—P. Guiraud (Paris), W. Mayer-Gross (Dumfries, Scotland), E. Morselli (Novara, Italy), H. C. Rumke (Utrecht, Holland).

Section 2: "The application of mental tests to clinical psychiatry"—Chairman—Honorio Delgado (Lima); Speakers—M. Bleuler (Zurich), Alfredo Guera (Madrid), R. Nyssen (Brussels), P. Pichot (Paris), David Rapaport (Stockbridge).

Section 3: "Cerebral anatomy and physiology in the light of lobotomies and topectomies"—Chairman—Frederick L. Golla (London); Speakers—H. J. de Barahona Fernandes (Lisbon), Walter Freeman (Washington), Alfred Meyer (London).

Section 4: "Indications of shock-therapy methods"—Chairman—Josef Handelsman (Varsovia); Speakers—U. Cerletti (Roma), Rysrard Dreszer (Poznam), M. Fiamberti (Vareze, Italy), Juan Lopez Ibor (Madrid), L. Meduna (Chicago), Manfred Sakel (New York).

Section 5: "The evolution and present trends of psychoanalysis"—Chairman—Franz Alexander (Chicago); Speakers—Franz Alexander (Chicago), Anna Freud (London), Maurice Levine (Cincinnati), Raymond de Saussure (New York).

Section 6: "Genetics and eugenics"—Chairman—Torsten Sjogern (Stockholm); Speakers—Franz Kallmann (New York,) Lionel Penrose (London), J. A. Fraser-Roberts (London), Eliot Slater (London), Erik Stromgren (Risskov).

Section 7: "Child psychiatry," no report will be made. The title of the matter is "Behavior problems in childhood and their prognoses."

(b) *Morning Sessions* (to consider further the afternoon subjects)

A—A special meeting is reserved for a further discussion on the subjects of the plenary sessions.

B—Debates (important meetings of discussion with speakers and reports) will be devoted to the following matters:

Section I: "Psychopathology of depersonalization" and "Notions of evolution and disintegration of the psychical functions in psychopathology"

Section II: "Clinical subdivision of the schizophrenia group" and "Clinical study of the atrophic dementias"

Section III: "Electro-encephalography in psychiatry" and "Experimental catatonia."

Section IV: "Therapeutic aspects of the lobotomies" and "Endocrine therapies"

Section V: "Group psychotherapy" and "Psychogenesis of the somatic manifestations"

Section VI: "War events and mental disorders" and "The problem of progression of mental disorders in modern societies"

(c) *Symposia*—Small meetings of an intimate nature between physicians interested in such topics as the following:

Section I: (1) Psychopathology of auditory and visual hallucinations, (2) existential analysis, (3) experimental neuroses by conditioning, and (4) constitutional typology.

Section II: (1) Narcoanalysis, (2) prognosis of the puerperal psychoses, (3) psychopathic personalities, (4) the final stages of manic-depressive psychoses, and (5) statistical classification of mental diseases of the World Health Organization.

Section III: (1) The maturation of the nervous system, (2) the biochemical factors affecting the ability to form conditioned reflexes, (3) the dysmetabolic oligophrenias, (4) the cephalo-rachidian liquid in psychiatry, (5) the isotopes in psychiatry, (6) cybernetics: cerebral and psychical functions, (7) pneumoencephalography, and (8) cerebral chemistry.

Section IV: (1) Electronarcosis, (2) therapy of alcoholism, (3) sleep treatment, and (4) vitamins in therapeutic psychiatry.

Section V: (1) Psychosomatic medicine of the stomach: gastritis and ulcers, (2) psychotherapy of schizophrenia, (3) psychoanalysis and daydreaming, (4) possibilities of psychotherapy and psychoanalysis in hospital spheres, and (5) hypnotherapy.

Section VI: (1) Architecture of psychiatric institutions, (2) disablement and incapacity for working conditioned by mental disorders, (3) special services for delinquents, (4) comparative legislations and relief organizations in the various countries, and (5) what is meant by social psychiatry?

The plenary sessions will be held at the Sorbonne, and during these sessions "simultaneous interpretation" will be available. For the morning debates, a system of "consecutive interpretation" in English and French only will be set up.

II. EXHIBITIONS

An exhibition of psychopathological art will take place at the Psychiatric Center of Sainte Anne.

An exhibition on the history and progress of

psychiatry (President M. le Professeur Laignel-Lavastine) will be held at the Palais de la Découverte.

In the Hall of the Sorbonne, there will be an exhibition of psychiatric books and magazines.

III. Receptions, Trips, Entertainments

An important program of receptions and entertainments is being set up: concerts, theatrical performances, evening receptions at the Palais de Chaillot, Louvre, etc. In addition, there will be visits to psychiatric centers, and trips in the country surrounding Paris.

At the International Meeting, October 24, 1947, the Organizing Committee of the International Congress of Psychiatry was designated: Honorary Chairmen, Professor P. Janet (In Memoriam), and Professor Jean Lhermitte; Chairman, Professor J. Delay; General Secretary, Dr. Henri Ey; and Treasurer, Dr. P. Sivadon.

The Congress' address is: Congres International de Psychiatrie, 1, rue Cabanis, Paris XIV.

Registered members will pay 6,000 francs and associate members (family) 3,000 francs.

Note: All the reports for the main plenary sessions are already printed in six volumes which will be sent to the registered members and to the psychiatric societies of each country, to be discussed before the final sessions, in Paris.

BOOK REVIEWS

PRACTICAL LESSONS IN PSYCHIATRY. By *Joseph L. Fetterman, M. D.* (Springfield, Ill.: Charles C. Thomas, 1949.)

This book written "for general practitioners, psychologists, social workers, nurses and personnel advisers who share the responsibility of guiding those who are mentally ill," is an exceedingly interesting volume in that it represents a trend in psychiatry away from the esoteric to the practical. The material evolved from a series of lectures delivered to student officers of the School of Military Psychiatry, and throughout it emphasizes a direct approach uncomplicated by archaic nomenclature.

The author begins with a chapter on the patient and his personality and in a simplified fashion sums up the importance of body constitution, quantity of energy or stamina, intelligence, and the effect of early environmental experiences. There is a very interesting section on mental attitude toward illness and injury as well. He next attacks the problem of the psychoneuroses discussing inheritance, childhood experiences, and training, emphasizing that "The Freudian concept, correct as it may be, does not sufficiently take into account inherited factors nor the impact of reality and actual life situations of the moment." Several case histories are presented, after which he lists at some length the symptoms of the psychoneuroses with case examples. In this chapter is also an interesting section on fear and psychosomatic disorder.

Treatment of the psychoneuroses follows and the author emphasizes primarily the value of the briefer techniques, following to some degree Herzberg's system. He also throws in some medicinal measures and here his pharmacological dosages, while standard, may frequently be found to be inadequate in severe cases. The author also includes a discussion of suggestion, group therapy, and psychoanalysis. Most of the material in this section is taken from the author's experience or other writers' and presents nothing really new.

The author next undertakes in a pair of lengthy chapters to handle the psychoses, devoting a large and well-written section to the problem of depression. He lists for the benefit of the compulsive diagnostician a differentiation between psychoneurosis and endogenous depression but adds sagely that "The borderline case is a difficult challenge." Apparently he still feels the need to stay within nomenclature divisions although obviously in his practice as shown by occasional remarks he has successfully escaped these ties from the past. The chapter on schizophrenia is one of the most superficial, simply repeating material available most everywhere else. He does add, however, a section on insulin coma therapy and in the subsequent chapter presents a full-fledged summary of electric convulsive therapy, which he has renamed electrocoma therapy for semantic purposes.

These two sections are so detailed as to make the reader feel that they represent potential training manuals. Instructions for patients and families are presented together with complete survey of all accessory medications. This is all very fine in texts written for psychiatrists. One can only wonder at this presentation in a book written for everybody else who deals with mental disease. Certainly the general practitioner and the nurse and the psychologist should have a general working knowledge of these shock methods, but such detailed discussion in a book specifically written for them is very apt to make them feel that these techniques can well be adapted by them for use with their patients. This assumption will probably not be made by the lay workers, of course, but there seems no doubt that the average general practitioner reading the book will assume that it indicates his potential ability to handle shock therapy. It is pretty universally agreed by psychiatrists that only experts carefully trained should employ such techniques and it is this reviewer's opinion that, while these chapters are excellent in themselves, they are definitely out of place in the present volume.

Psychopathic personalities are next taken up with several typical histories and the classifications used are mainly military and for the most part of working value. One would question the therapeutic value of discipline, which the author states "will temporarily deter some psychopaths from repeating the misconduct or the crime," in the face of the widely accepted theory that the psychopath ordinarily is unable to profit from punishment. As usual, the term is utilized here to cover a wide variety of cases and the chapter is too short for adequate discussion of all of them. The author also includes in this chapter malingering and alcoholism.

Toxic organic psychoses and a chapter on neurosyphilis and epilepsy follow and the book is concluded by a discussion of the sequelae of head trauma. In discussing these organic reaction types the author has not deviated from the standard thinking in the field and the summaries are reasonably complete. There is also a fair index.

In general, the volume adheres to the statement of the jacket blurb that "It will not confuse the reader by any sudden breaking from tradition." This is a useful aim in a book written for general practitioners and the book can be definitely said to achieve this purpose. Since the author has not attempted to write a volume for psychiatrists he can hardly be criticized for the numerous omissions of detail in the various chapters. He has selected his material with a specific end in view and has reasonably well reached his goal.

DOUGLAS M. KELLEY, M. D.,
University of California,
Berkeley.

VERSTEHENDE PSYCHOLOGIE. By *Hans Gruhle.* (Stuttgart: Georg Thieme Verlag, 1948.)

Professor Hans Gruhle is one of the leading psychiatrists in Germany and teaches at the University of Heidelberg. He is the author of a number of scientific publications, and he has made a series of important contributions to the study of schizophrenia, suicide, juvenile delinquency, criminology, and other related subjects. The subtitle of his new book provides the key to the approach of its subject. He calls it *Erlebnis Lehre,* the science of experience. The word *Erlebnis* is one of those German words that has no counterpart in the English language except by qualification. The qualifying word needed here is "feeling." The English translation, therefore, becomes cumbersome and should read: the science of the experience of feeling.

For the author, psychology is the science of psychic happenings within the individual in all his relationships to other people and the world around him. He restricts the conception of "understanding" solely to empathy. He explicitly excludes evaluation and interpretation, as well as causality. He claims that these latter conceptions belong to another branch of psychology. Gruhle defines character as follows: (p. 149) "Character is the summary of the permanent qualities of the emotions and the will. It is an 'Anlage' forming an 'entelechy.'" He continues to explain that sometimes the genes of one parent are so strong and rigid that they assert themselves alone; sometimes the parental substances form a sort of mosaic, which may give the impression of being something entirely new, while a third possibility is the melting and inner adaptation of both parental substances into a completely new formation. The latter is not considered an "Anlage."

The book is very well planned and its subject carefully executed. It covers a large ground and the author's theories are applied to the social sciences, philosophy, history, to the arts, as well as to jurisprudence, the study of languages, natural history, medicine, and education. This wide application makes a critical analysis of all aspects next to impossible, but where they deal with the personality proper this reviewer found herself on firmer ground.

Granted the fact that psychiatrists in Germany have, with few exceptions, rejected the existence of dynamic forces in the structure of the personality, it is, nevertheless, strange to see where such strict adherence to the purely descriptive conception of psychology may lead. In spite of the criticism, the importance of this book cannot be stressed enough. Only too often have some students of human nature laid too much emphasis on interpretation at the expense of the fundamentals of psychology as described in this book. If, however, in our day and age, an attempt is made to explain human conduct with the exclusion of motivations and dynamic mechanisms, the approach must be regarded just as incomplete. Although the author admitted in the introduction that there exist other branches of psychology and claimed that he merely omitted them from his analyses, one cannot help having the feeling that he, too, actually rejects them.

How much Gruhle disclaims even the slightest hint at dynamic mechanisms that may determine some actions of an individual can be seen from the following example: On page 236 we read, "It is not correct to assume that the motivation of a politician who persecuted Jews was due to his own unhappy experiences with Jewish people in the past. One must assume that his ability to hate, his actual hostility was at the bottom of his actions but not the experiences, however important they may have been."

One can agree with the author that "these experiences" were not actually the cause of this politician's actions; yet one can only reject the "explanation" he gives. Interpretation would be heresy in the opinion of the author! One wonders whether empathic psychology is satisfied with the author's version and whether no further questions arise in the mind of a scientist oriented along these principles, as for instance, why there was so much "ability to hate" accumulated in this politician and why this particular group of people was selected as victims. Furthermore, it leaves the question open as to whether or not something in the politician was gratified by expressing his "ability to hate." In defense of the author, we must remember that most of the manuscript must have been compiled before the end of the war.

Conceding the right of investigating only portions of the making of the personality, the author, however, repeatedly implies that his portion is all that there is to the personality. Consequently, he rejects the existence of all these manifestations coming from the unconscious against the intention of the individual.

A great many of the chapters provide interesting and very instructive reading. Others, through the onesidedness of the approach, arouse resistance in the psychiatrist who operates daily with unconscious dynamic factors in his patients and who has been accustomed to pay attention to both empathy and interpretation.

This book ought to be very helpful to any student of medicine and the humanities prior to studying dynamic psychology.

OLGA KNOPF, M. D.,
New York City.

READINGS IN THE HISTORY OF PSYCHOLOGY. Compiled and edited by *Wayne Dennis.* (New York: Appleton-Century-Crofts, Inc., 1948.)

Dennis has compiled 61 selections from the original writings of 49 men who have made major contributions to the development of psychology. Many of these selections are complete reproductions of original articles; the remainder are excerpts from books and monographs. They are arranged in chronological order.

The distribution of selections according to original date of publication is as follows:

	Selections
Before 1600 A.D.	2
1601-1700	6
1701-1800	5
1801-1850	11
1851-1900	19
1901-1930	18

The earliest period is represented by Aristotle only; the 17th century by Galileo, Descartes, Hobbes, Newton, and Locke; the 18th by Berkeley, Hartley, Mesmer, Thomas Young, and Dalton. From 1800 to date, the names are those of physiologists and philosophers who contributed to the founding of scientific psychology and of the psychologists who have carried on since the time of Helmholtz, Fechner, Wundt, and Galton.

The coverage of the book can be further summarized by classifying the papers according to their content:

	Selections
Explication of systematic position, general theory—philosophical argument.	13
Sensation and perception	14
Individual differences (including mental testing, etc.)	10
Learning and retention	7
Brain function, physiology and anatomy of nervous system	6
Development of behavior	3
Miscellaneous (reaction time, emotion, memory, etc.)	8

Absent from the above list are writings in the fields of abnormal psychology, psychology of personality, and social psychology. Dennis does not explain these omissions in his introductory comments. The necessity of keeping the present volume to a moderate size justifies, perhaps, the limitations in coverage.

The editor and publishers of *Readings in the History of Psychology* have performed a valuable service in making available to students of psychology this excellent selection of classical papers.

W. D. Neff,
Department of Psychology,
The University of Chicago.

Neurological Anatomy in Relation to Clinical Medicine. By *A. Brodal.* A revision and translation of Dr. Brodal's "Nevro-Anatomi," first published in 1943 in Oslo. (Oxford University Press, 1948.)

This excellent anatomical treatise covers the various divisions of the nervous system with a good correlation between the anatomical structure and physiological function. The author has a lucid way of presenting his material. It is my impression, however, that he sometimes states his own opinion as a fact. In certain instances he appears to be somewhat dogmatic and indicates that the opinion expressed is the only possible explanation of a given phenomenon. For example he makes reference to complicated connections in the central nervous system and indicates physiological function that has not yet been definitely established. It would seem that this might better be left out or that the hypothetical nature of the interpretation be more clearly indicated.

In criticism of the book, it might be pointed out that the author does not quote his authority for certain statements as much as might be desired. Had this been done it would be of more value as a reference work. A better title would be ". . . . in relation to Clinical Neurology" rather than ". . . . in relation to Clinical Medicine."

With these minor criticisms in mind, it must be emphasized that this is an excellent book, very well written, which elucidates many of the correlations between anatomical structure and physiological function. It can be very highly recommended as a book to be used by the student of neurological anatomy and by the clinical neurologist.

Raymond W. Waggoner, M. D.,
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Ann Arbor, Mich.

The Thematic Apperception Test. An introductory manual for its clinical use with adult males. By *Morris I. Stein.* (Cambridge, Mass.: Addison-Wesley Press Inc., 1948.)

Clinical usage has proved the value of the Thematic Apperception Test (commonly known as the TAT) as a device for revealing the content of personality in contrast with the Rorschach, which reveals its structure. Although the two devices have become standard tools in psychological practice, relatively few discussions of the TAT are available. Dr. Stein's book is therefore a welcome publication.

The manual is designed to serve as a teaching device for training psychologists in the administration and analysis of the TAT. Although the pictures discussed and the records analyzed concern adult males, the principles involved are fundamental to use with all subjects. The techniques of administering and analysing the test are succinctly, clearly, yet fully outlined. Each picture is discussed in terms of the common significant material it may elicit. The last half of the book is devoted to a full, line-by-line analysis of a record as given by a 26-year-old male subject. The discussion relates not only to this particular record but includes general comments.

This compact, concise book should prove valuable to all students of clinical psychology whether in formal course instruction or in self-education. For the psychiatrist who does not have available the services of a psychologist, it might be a helpful guide to the use of the TAT in his own practice for both diagnostic and therapeutic work.

Helen Thompson, Ph. D.,
New York City.

ANNUAL INDEX

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In searching for a specific article the Author entry should be consulted if the name of the author is known, since the complete bibliographical reference is to be found after the author's name only. When there are two or more authors for an article the complete entry appears only under the name of the first author. Under the name of each of the joint authors a cross reference is made to the original author entry.

The titles under the subject entries are often inverted or shortened, and the name of only one author per article is shown if there are more than two. For the complete author reference the Author Index should be consulted. The Subject Index covers original articles, biographic material, book reviews, obituaries, editorial comments, and news items.

R. indicates a book review; the title of the book is followed by the author's name and is also listed by author under Book Reviews. Ed. indicates an editorial comment or news item. P.P. indicates comment that appeared in a President's Page. Memorial notices appear under the heading Obituaries and under the names of individuals.

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